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3RD WING (PACAF)

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This supplement implements and extends the guidance of AFI 21-101, *Aircraft and Equipment Maintenance Management,* **26 July 2010.** The AFI is published word-for-word without editorial review. This supplement establishes guidance and procedures for safely and effectively maintaining, servicing and repairing aircraft and support equipment and does not apply to the Air National Guard (ANG), Air Force Reserve Command (AFRC), and the Civil Air Patrol. Refer recommended changes and questions about this publication to the office of primary responsibility (OPR) (see **Attachment 1**) using the AF Form 847, *Recommendation for Change of Publication*. Route the AF Form 847 through the appropriate chain of command. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Information Management System (AFRIMS) Records Disposition Schedule (RDS) located at **https://my.af.mil/afrims/afrims/afrims/rims.cfm**. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

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1.4.1. Maintenance Assistance Request:

1.4.1.1. (Added) Technical/maintenance assistance: advice, assistance, and training pertaining to installation, operation, and maintenance of equipment using currently authorized procedures; authorization for onetime, limited duration or permanent repairs beyond existing technical order (TO) procedures; authorization for limited use of non-listed substitutes to prevent work stoppage. All requests for maintenance assistance will be coordinated through the quality assurance (QA) office and be approved by the 3 MXG/CC prior to being submitted. C-17 units submit a request for engineering disposition through the VECTOR system. E-3 units submit a technical assistance request (TAR) or one-time flight authorization (FA). For F-22's, the field service representative's (FSR) submit an action request (AR) in the field information network (FIN) system and email through the AR distribution list.

1.4.1.2. (Added) Organizational and Intermediate Level Maintenance: task beyond PACAF's capability to accomplish. This may require a combination of technical assistance and skilled technical augmentation. F-22 units submit a -107 in FIN, C-17 submits request through VECTOR, and E-3 submits a TAR in Air Wave.

1.4.2. (Added) QA will notify maintenance operations control (MOC), 3 MOS/MXOOS, plans, scheduling, and documentation (PS&D) and the applicable 3 AMXS/AMU supervision with tail number, date, time, reason request for assistance was submitted and a copy of the engineering technical assistance request (ETAR)/ technical assistance request (TAR)/request for engineering disposition instructions (REDI)/AR. MOC will log information into senior control log. The 3 maintenance operations squadron (MOS) PS&D will change possession identification (ID) in the appropriate maintenance information systems (MIS) to the appropriate possession ID (possession purpose identifier (PPI) code). Aircraft undergoing maintenance (isochronal inspection (ISO),cannibalization (CANN), personnel evaluation (PE), and so forth) will not change PPI code until at a work stoppage due to depot assistance request.

1.4.3. (Added) MOC and 3 MOS/MXOOS will be notified of all supplements and engineering responses associated with the maintenance request. Verbal or e-mail disposition may be obtained from engineering initially, however, written authorization routed as outlined in paragraph **1.4.1.1**, this supplement, must be obtained before the repair is considered complete.

1.4.4. (Added) If technical assistance results in a waiver or deferment of a specific maintenance action, the authorization will be in writing to include any associated limits and parameters. The waiver will remain in the active maintenance (AFTO Form 781, *Aviation Resource Management Systems (ARMS) Aircrew/Mission*, series/integrated maintenance information system (IMIS) Electronic Forms) and historical records until the waived or deferred action is complete.

2.14.1. (Added) For F-22A aircraft, the bottom portion of the AF Form 1492, *Warning Tag*, will remain attached.

2.14.1.1. (Added) For F-22A aircraft, when creating a job control number (JCN) for Warning Tag installation, use the general logistics control number (LCN) for the system (for example, A280000). No tech order data (TOD) task is necessary. The corrective action will be sign-off as "Warning Tag Removed", with Action Taken "X" and HMAL "799". This will ensure maintenance information system (MIS) will not reject the documentation.

2.14.2. (Added) Warnings in IMIS will be attached to the JCN for the original discrepancy and the JCN for the Warning Tag Installation. This will ensure every maintainer is aware of the conditions upon review of IMIS Electronic forms. Warning Tags will be installed on aircraft in the location most likely to prevent the inadvertent system activation (for example, External Power Receptacle, Refuel Single Point Receptacle, Hydraulic Test Stand Connection Couplings, and so forth). For F-22s leave stub attached to tag and place a note with tag number in the electronic forms discrepancy block.

2.20. (Added) Aircraft hangaring (except fighter combat alert cell (CAC)/and all slots):

2.20.1. (Added) The towing supervisor will initial each item separately, ensuring the checklist is accomplished and the aircraft is properly configured. The towing supervisor will sign the hangar entry checklist. The C-17 checklist will be displayed in the aircraft forms in front of the AFTO Forms 781A, *Maintenance Discrepancy and Work Document*. The F-22 checklist will be displayed on or near the nose landing gear if the gear is removed, in clear view. The E-3 checklist will be displayed in the aircraft forms in front of the AFTO Forms 781A/or designated location. Snatch cables must be attached to aircraft main landing gear towing bridles when nose is not accessible to a tow vehicle, or when the aircraft tow fitting is removed. Tow supervisor will ensure area is clean upon removal of A/C.

2.21. (Added) Fighter A/C Only . All personnel will wear protective foot coverings (booties) when walking on any external surface of aircraft. Operational risk management must be used during inclement weather, aircraft washes and whenever wearing booties may not provide enough traction for the individual to work safely.

3.4.1.5.1. (Added) The 3 MXG/CC will approve all non-maintenance use of aircraft maintenance facilities under his control.

3.4.1.72. (Added) Compass Vector Program.

3.4.1.72.1. (Added) F-22 aircraft units should strive to fly Compass Vector engines at least twice the unit average per month as outlined in 3 MXG MOI 21-160, C*ompass Vector Program*.

3.4.1.72.2. (Added) The 3 MXG/CC will designate a primary/alternate Compass Vector program monitor.

3.8.36. (Added) Maintenance supervision must schedule an appointment for any individuals who commit a technical or safety violation (technical data violation (TDV)/detected safety violation (DSV)) and their supervisory chain to see the 3 MXG/CC (Deputy when the commander is not available). This will be accomplished by the next duty day.

4.10.1.6.1. (Added) In coordination with the assigned production superintendant, ensures training aircraft changes (that is, location changes, aircraft changes) are kept to the absolute minimum. Any deviations will be coordinated through the weapons standardization (WS) superintendant or mission design series (MDS) assigned load standardization crew (LSC).

4.10.1.20. All armament anomalies (that is, malfunctions, jams, dropped munitions, and so forth) will be reported to the wing weapons manager (WWM) as soon as possible not to exceed 24 hours.

4.10.1.30. (Added) Ensures proper storage, handling, and transportation of impulse cartridges as listed below:

4.10.1.30.1. (Added) Transportation:

4.10.1.30.1.1. (Added) Metro-type vehicles used to transport impulse cartridges may concurrently transport personnel required to support the mission, provided all requirements in AFMAN 91-201, *Explosives Safety Standards*, are met.

4.10.1.30.1.2. (Added) Impulse cartridges must be secured in a lockable container when vehicle is left unattended and unlocked.

4.10.1.30.2. (Added) Procedures:

4.10.1.30.2.1. (Added) All impulse cartridges installed in aircraft will be indicated on AF Form 2434, *Munitions Configuration and Expenditure Document*, or locally generated form, regardless of intent to expend.

4.10.1.30.2.2. (Added) The consuming organization or activity will provide the munitions accountable system officer (MASO) with expenditure of munitions electronically as soon as possible, but within 5 duty days. Electronic submission will include the following: Nomenclature, national stock number (NSN), quantity, document number, lot/serial number/condition code, category (CAT) code, the words "CLASSIFIED ITEM" if applicable, statement "EXPENDITURE", reason for use (such as, training, test, operational), signature (electronically/digital or hard copy) of custody account custodian or organization commander, printed name, date, and phone number. Electronic/digital signature is preferred method; hard copy request should only be used when Elmendorf Electronic Mail Server is down. Except for emergencies, activities submit munitions issue requests 10 workdays before the time and date required in place. Source documents will be completed in accordance with AFI 21-101/Wg Sup 1; issue requests should be submitted electronically to the munitions organization. MASO may authorize verbal or written requests. All issue requests will include the following: Organization (ORG)/shop code, Nomenclature, NSN, Quantity, CAT Code, the words "CLASSIFIED ITEM" if applicable, date and time required, requestor/originator must be custody account custodian or organization commander, remarks will include "CONSUMPTION ISSUE" or "CUSTODY ISSUE," and reason for use (such as, training, test, operational, and so forth. In addition, consumption issues must also have on electronic form: Grounding date of aircraft for time change items and justification if this is an initial issue.

4.10.1.30.3. (Added) Key Control:

4.10.1.30.3.1. (Added) Keys for licensed storage lockers will be maintained by the aircraft maintenance unit (AMU) support section or weapons section chief. AF Form 2432, *Key Issue Log*, will be used to control keys.

4.10.1.30.3.2. (Added) A letter signed by the appropriate support or weapons section chief identifying personnel authorized to receive keys and authorized access to the cartridge locker will be conspicuously posted at the storage locker and a copy maintained with the AF Form 2432.

4.10.1.30.4. (Added) Security/Storage Procedures:

4.10.1.30.4.1. (Added) This supplement and an explosive license approved by the 3 WG Safety Office will be clearly displayed at the licensed location.

4.10.1.30.4.2. (Added) AMU's impulse cartridges will be stored and secured in an authorized locker with double locks.

4.10.1.30.4.3. (Added) The serviceable, unserviceable, and transient aircraft impulse cartridges will be stored in separate areas within the locker or vehicle.

4.10.1.30.4.4. (Added) Impulse carts not in the locker, or installed in the aircraft, will not be left unsecured at any time. Cartridges are considered secured if attached to munitions trailer by a tie-down strap or in a cart can that is secured to weapons composite tool kit (CTK) with its lanyard, providing the trailer or CTK is in a restricted/controlled area.

4.10.1.30.5. (Added) Accountability:

4.10.1.30.5.1. (Added) Inventory impulse cartridges at each shift change. Inventory will account for the quantity of carts in the locker, truck, expended, and the quantity installed in aircraft. These totals must equal the inventory totals from the previous shift/day.

4.10.1.30.5.2. (Added) A 100 percent physical inventory of all cartridges will be accomplished at the end of the flying week.

4.10.1.30.5.3. (Added) If any discrepancies are discovered during these inventories, take immediate action to resolve the problem. If any cartridges are missing, initiate a lost tool/item report in accordance with Chapter 10, this supplement. Do not issue any further items until the discrepancy is resolved.

4.10.1.30.6. (Added) Operating Locations:

4.10.1.30.6.1. (Added) Location of operations will be limited to designated licensed storage facilities, designated combat parking areas and other areas on the airdrome, such as arm/dearm areas.

4.10.1.30.6.2. (Added) When munitions are picked up or delivered to the Six Mile munitions storage area, the driver will use designated munitions movement routes to the greatest extent possible. Ensure the vehicle is equipped, in accordance with AFMAN 90-201, with 2 each fire extinguishers rated at least 2A:10BC, chocks, and is able to properly secure/restrain explosives in the vehicle's cargo area for transportation. Explosive placards are not required for hazard class/division 1.4 munitions.

5.5.3.2. (Added) The Egress Section Vehicle:

5.5.3.2.1. (Added) The Egress Section will use a vehicle conforming to all applicable requirements in AFMAN 91-201, Chapter 2, *Reaction Effects*. This vehicle will be used to transport tools, ejection seats, all related explosive components and personnel to and from the job site, including authorized areas of the flight line and inside hangars.

5.5.3.2.2. (Added) The vehicle will be limited to two ejection seats and related explosive components. Explosive components must have all safety devices installed and munitions including seats must be secured to prevent movement during transit. Explosive-laden vehicles will be chocked and must not be left unattended during operations.

5.5.3.2.3. (Added) Transportation of personnel will be limited to the minimum essential required when ejection seats and related class/division 1.3 and 1.4 explosives are transported together in the cargo compartment.

5.5.3.2.4. (Added) Drivers of an explosive-laden vehicle must complete explosive safety training and posses a valid government driver's license and if required to drive on the flight line,

an Elmendorf AFB Flight Line Certificate of Competency Card (AF Form 483 "*Certificate of Competency"*). Proper vehicle placards are required.

5.5.3.2.5. (Added) During actual or expected inclement weather, for example, snow, rain, icy conditions, or high winds, egress maintenance will not be started on unsheltered aircraft. If maintenance is in progress and precipitation or high winds occur, maintenance will be delayed until inclement weather ceases or aircraft is sheltered. In addition, if proper demand/response communication is hindered due to high aircraft engine noise, egress maintenance will cease until the noise is diminished and proper communication is reestablished. Ultimately, the egress section will evaluate the environmental conditions and determine feasibility prior to performing maintenance.

5.7.1. The Armament Flight will respond to flight line for certain types of unscheduled maintenance, such as jammed guns, jammed universal ammunition loading system (UALS), and so forth; however, normal unscheduled repair actions, such as broken canard springs, launcher swaps, or other routine flight line maintenance will be performed by the AMU.

5.7.3.16. (Added) Will ensure ammunition clearing procedures outlined in **Attachment 2** are adhered to.

5.7.3.17. (Added) Ensures MOC is notified when gun system or UALS/linkless ammunition loading system (LALS) components containing live ammunition are received into the armament flight.

5.7.4.1. Equipment due into armament shop for inspections is to be scheduled for removal by the owning AMU; do not create an off-equipment work center event. The armament shop will schedule the off-equipment inspections. Equipment suspected of causing a pilot reported discrepancy or which fails to pass a functional check will have an in-shop work-center event loaded in MIS using the original JCN. All maintenance actions taken to correct the discrepancy (equipment installation/removal, repairs, and so forth) will be documented against a single JCN to aid in future troubleshooting actions.

5.7.5.1. Accountability. AMU weapons sections will identify, by letter, a point of contact (POC) within their respective sections responsible for the accountability of special purpose recoverables authorized maintenance (SPRAM) items. This individual will be responsible for performing a semiannual inventory in conjunction with the armament flight POC. This will be an inventory of all assigned equipment and ensure the equipment is properly loaded into MIS. After the inventory is completed, an AF Form 1297, *Temporary Issue Receipt,* will be issued for a signature by the respective AMU's POC. Equipment will be considered re-issued to the applicable AMU for another 6 months.

5.9.2.5. (Added) The 3 EMS Aircraft Structural Maintenance (ASM) Section will:

5.9.2.5.1. (Added) Appoint a Corrosion Control Program Manager to oversee the Wing Corrosion Control Program. The individual appointed will hold a primary Air Force Specialty Code (AFSC) of 2A773, with a minimum grade of TSgt or civilian equivalent. The Corrosion Control Program Manager will distribute applicable corrosion cross talks/applicable information as required to the affected work centers.

5.9.2.5.2. (Added) Ensure all required forms and MIS documentation are completed prior to maintenance. Items taken to Corrosion Control must be accompanied by current TO extracts when required and will be delivered clean and free of all reflective vinyl.

5.9.2.5.3. (Added) Assist maintenance training in establishing and maintaining a Corrosion Control and Prevention Training Program.

5.9.2.5.4. (Added) Coordinate aircraft paint schedule at the monthly Shared Resources Meeting.. **EXCEPTION:** This paragraph does not apply to F-22 aircraft paint.

5.9.2.6. (Added) All touch up operations will be accomplished in the corrosion control hangar (CCH). Touch up operations other than in the CCH will be kept to an absolute minimum and be limited to brush and roller only.

5.9.2.7. (Added) The 3 EMS/Armament Flight and 3 AMXS/Aircraft Section will determine and schedule aircraft external fuel tanks and aircraft maintenance equipment (AME) requiring corrosion control and painting on an "as required basis" through the Aircraft Structural Maintenance North Shop . The number of pieces that can be painted and/or treated on a weekly basis will fluctuate depending on mission requirements.

5.9.2.8. (Added) The 3 EMS/AGE Flight will ensure all equipment to be painted in the Aircraft Structural Maintenance North Shop will be delivered clean and free of all reflective tape and vinyl.

5.9.2.9. (Added) Schedulers will schedule fighter aircraft on a maximum 90-day wash interval.

5.9.4.2.5.1. (Added) Unshielded Radiographic operations in Hangar 2 and Hangar 3 will be restricted to mid shift (2330 to 0530), unless approved by the 3 MXG/CC. AMU will provide personnel as door guards when radiographic operations are accomplished during day or swing shift in high traffic locations. Door guards (if required will work under the direction of the senior radiographer.

5.9.4.2.5.1.1. (Added) MOC will notify all applicable agencies when and where radiographic operations will be accomplished and when completed. MOC will announce "area/hangar is closed by non-destructive inspection (NDI) for x-ray operations until XXXX hrs."

5.9.4.2.5.1.2. (Added) Senior Radiographer will ensure compliance with PACAFI 21-105, *Air and Space Equipment Structural Maintenance*, AFI 21-101, AFOSH 91-110, *Non- Destructive Inspection and Oil Analysis Program*, all radiation protection surveys, and local operating instructions to ensure the safety of all personnel.

6.2.2.10.1.1. (Added) The emergency action checklist (EAC) checklists will be coordinated through each Squadron Operations Office/Maintenance (Mx) Superintendent, AMU officer in charge (OIC)/Mx Superintendent, QA and the MXG/CC (CD) prior to being implemented.

6.2.2.10.1.2. (Added) Each AMU/Squadron Production Supervisor will respond with his/her initials by radio or telephone to the MOC acknowledging that they heard and understood the emergency in progress:

6.2.2.13.1. (Added) MOC will enter all deviations in GO81 for C-17 aircraft with the exception of ground aborts, these deviations will be entered by the 517th debrief section.

6.2.2.24.2.1. (Added) Command Post will relay inbound C-17 aircraft aircrew advance status to the MOC. MOC will relay this status along with a parking request to the 517th pro super. The pro super will provide a parking location to the MOC, who will in turn notify Command Post.

6.2.3.19.2.5. (Added) Each squadron operations officer/Mx Superintendent will ensure the below outlined procedures are followed:

6.2.3.19.2.5.1. (Added) When flight line personnel receive serially controlled parts through base supply; they will forward the serviceable tag to engine management (EM). EM will verify the serviceability of the component through the comprehensive engine management system (CEMS) central database. The only personnel authorized to load engine parts are EM personnel.

6.2.3.19.2.5.2. (Added) 525, and 90 AMU's. Ensure all completed borescope data is sent to 3 MOS/MXOOE Engine Management for processing. Ensure all completed engine borescopes are signed off in appropriate MIS with a narrative that describes any reportable defects.

6.2.3.19.2.5.3. (Added) EM will check the automated history indicator block when documenting MIS. Engine management processes the MIS suspense to ensure MIS/CEMS times, and automated histories are updated.

6.2.3.19.2.6. (Added) The Propulsion Flight will:

6.2.3.19.2.6.1. (Added) Ensure all receiving work packages are reviewed and pre-docked with EM. Propulsion flight and EM will close out all final work packages.

6.2.3.19.2.6.2. (Added) When Propulsion Flight receives serially controlled parts through base supply they will forward the serviceable tag to EM. EM will verify the serviceability of the component through the CEMS central database. The only personnel authorized to load engine parts are EM personnel.

6.2.3.21. (Added) N/A to 517 AMU. For deployments, the deploying AMU will appoint a deployed engine monitor to report to EM Section for training on deployed responsibilities, three duty days prior to departure. Upon returning, the deployed engine manager will report within three duty days to EM to review all engine removals and installations, serially controlled component removal and installations. All time compliance technical orders and special inspections will be reviewed as well. Accuracy of deployed information reported back to EM is the responsibility of the deployed engine monitor.

6.2.5.1. (Added) If the maintenance operations flight (MOF) PS&D is using the maintenance scheduling application tool (MSAT), manually updating products is not required. **EXCEPTION:** C-17 aircraft use Global Reach.

6.2.5.1.1. (Added) Processing IMDS screen 128 is not applicable to /C-17 organizations.

6.2.6.10.1. (Added) Responsibilities:

6.2.6.10.1.1. (Added) The 3 MOS/MXOOA maintenance data systems analysis (MDSA) is responsible for all work center numbers/codes in IMDS in accordance with TO 00-20-2, *Maintenance Data Documentation*.

6.2.6.10.1.2. (Added) The Programs and Resources Office within each group is responsible for the organizational structure codes and functional account codes in accordance with the unit manning document (UMD).

6.2.6.10.1.3. (Added) The Programs and Resources Office within each group is responsible for coordinating with before adding, changing, or deleting a work center in integrated maintenance data system (IMDS).

6.2.6.10.2. (Added) Procedures:

6.2.6.10.2.1. (Added) Requests for work center additions, changes, and/or deletions will be routed for processing in memorandum format through and the respective group's Programs and Resources Office.

6.2.6.10.2.2. (Added) The section will assign an IMDS mnemonic and work center number/ code based on the following format.

6.2.6.10.2.2.1. (Added) Work center number/code: in accordance with TO 00-20-2 based on code designations previously established.

6.2.6.10.2.2.2. (Added) Work Center Mnemonic. Based on the branch assigned and previously created work center mnemonics for that organization/branch. Similar naming convention will be used to mirror the previously existing organizational structure.

6.2.6.10.2.2.3. (Added) Organizational Structure Code/ Functional Account Code: In accordance with UMD.

6.2.6.10.2.2.4. (Added) MDSA will maintain a current list of unit identifiers, organizations, branches, and work center mnemonics loaded into IMDS for reference when establishing new work centers or changing existing work centers. The list will be maintained on the QA Website.

6.2.6.16.4.5.1. (Added) The IMDS daily static saves will be accomplished at (0000 - 0100 Alaska Standard Time (AST)) by Defense Enterprise Computer Center (DECC) already spelled out in AFI 21-101. The IMDS database will remain available for processing during this daily save.

6.2.6.16.4.6. IMDS Downtime . During any unscheduled downtimes, contact IMDS database management section. The following is the scheduled downtimes for IMDS database. All units should be familiar will these times and plan accordingly.

6.2.6.16.4.6.1. (Added) Weekly static saves of relational database management system (RDMS) tables and data management services (DMS) database areas (Saturdays 1900-2100).

6.2.6.16.4.6.2. (Added) Load IMDS software releases (as needed, Sundays 0500-0900).

6.2.6.16.4.8.2. Employ manual backup procedures by using AFTO Form 349, *Maintenance Data Collection Record*, or IMDS/G081 pre-printed screen snapshots to document all maintenance in sequential order (based on manual job control sequence numbers assigned to each work center). For a list of the manual work center job control sequence numbers, reference the QA website. Straight-line input files can be maintained in microcomputers for pseudo processing (files must be saved as text files). Units using documentation systems with store-forward capability (computer fault reporting system (CFRS), point of maintenance (PoMX), integrated maintenance information system (IMIS), may continue to document data in a stand-alone environment. Once the system comes on-line, sufficient time will be allowed to input transactions. Pseudo processing will be established for straight-line inputs. CFRS, PoMX, and IMIS will download all data to IMDS, once connectivity has been re-established. **NOTE:** All

hand-scribed forms must be legible. Maintenance data collection and automated debriefing transactions cannot be Pseudo processed.

6.2.6.16.4.9. File Transfer Protocol (FTP). To eliminate the need for printed products users with background report processing and/or demand access should try to use FTP via automated run streams as much as possible. The program allows user to retrieve current background reports in text form via the Internet and reduces processing during peak times.

6.2.6.16.4.15. See **Attachment 3** for sample MIS Controlled TRIC Authorization letter.

6.2.6.16.4.15.1. (Added) Subsystem managers will forward a completed letter to the database manager (DBM) for users requesting access to controlled IMDS transaction identification code (TRIC) security profiles. Subsystem managers maintain the responsibility of allowing access to their IMDS areas. Users granted access to controlled programs and subsystems would be briefed on their responsibilities and accountability for the accuracy and integrity of all data input into IMDS.

6.2.6.16.5. Attachment 4 lists work center's responsible for management of MIS subsystems.

6.2.6.16.6. Data Integrity Program (DIT) . The 3 MOS/MXOOA section will act as the OPR for DIT. Each maintenance unit will appoint a primary and alternate DIT monitor by appointment letter and will forward the letter to 3 MOS/MXOOA. If a DIT member is replaced a new letter will be accomplished and as soon as possible. New DIT personnel will report to maintenance analysis to receive training upon appointment as DIT monitor.

6.2.6.18. (Added) MIS Deployment Procedures:

6.2.6.18.1. (Added) The deploying organization will contact the section as soon as notified of deployment commitment.

6.2.6.18.2. (Added) Based on airframe tasked and MIS, the appropriate pre-deployment checklists will be provided to the deploying organization and will require completing and returning to the section at least one week prior to advance echelon (ADVON) departure.

6.4.11. (Added) The 3 MXG Avionics Manager is assigned to 3 MOS/MXOP. The avionics manager will be the primary focal point for all avionics matters within the 3 MXG and act as focal point on several programs as outlined in Chapter 14, *Additional Maintenance Requirements and Programs*. They will also act as the alternate Electronic Warfare Officer and chair the Avionics working group meetings.

7.1.1. Refer to TO 00-20-1, paragraph **9.5** for AFTO Form 95, *Significant Historical Data*, documentation requirement.

7.1.2.1. (Added) See 3 MOS MS SharePoint® **https://elmendorf.eim.pacaf.af.mil/3WG/3MXG/3MOS/MOF/MXOOS/default.aspx** for Aircraft Forms Checklists.

7.1.3. See 3 MOS MS SharePoint ® for annual jacket file review checklists. Missing IMT Forms will be re-duplicated if possible or a Memorandum for Record will be filed in its place detailing the missing information, if known.

7.1.4. Refer to paragraphs **7.2.2**. and **7.2.3.1**, basic, for Pre/Post Dock requirements.

7.1.5.1. (Added) See 3 MOS MS SharePoint® **https://elmendorf.eim.pacaf.af.mil/3WG/3MXG/3MOS/MOF/MXOOS/default.aspx** for decentralized historical documentation checklist.

7.1.6. Performing work centers will install and remove all applicable time change items (TCI) for work performed using applicable MIS. PS&D will process applicable MIS screens to accomplish suspense validation and load job standards. The 3 CMS Egress and 3 OSS Life Support Section will load, install, remove, validate suspense, and establish the job standard (JST) for all applicable TCI's in applicable MIS. A separate letter will be published by Egress and Life Support designating authorized individuals (SSgt and above) allowed to process suspense validations. However, for all TCI's completed, Egress and Life Support must send a copy of MIS documentation showing job completion no later than the following Wednesday to PS&D. PS&D will use hard copy of the MIS documentation to verify data is updated in MSAT/MIS time compliance technical order (TCTO) hazardous materials will be ordered by the applicable work center.

7.1.7. TCTO folders and monthly/weekly usage and maintenance schedules will be formatted after the Master TCTO folder and monthly/weekly usage and maintenance schedule maintained by 3 MOS/MXOOS.

7.1.8. Refer to 3 WG OPLAN 91-1, *Investigation & Reporting Plan for Flight, Ground and Weapons Mishaps*, for freezing and consolidating aircraft and equipment records in the event of an accident or mishap. Refer to 3 MXG EAC for impoundment procedures.

7.1.9. Refer to paragraph **7.2.9**, basic, for transfer inspection requirements.

7.1.10. Refer to 3 MOS MS SharePoint ® **https://elmendorf.eim.pacaf.af.mil/3WG/3MXG/3MOS/MOF/MXOOS/default.aspx** website for ADR checklists.

7.1.11. Refer to AFI 21-101, paragraphs **7.2.2.2** and **7.2.3**.

7.1.11.1. (Added) Refer to AFI 21-101 paragraph **7.2.4** for aircraft configuration management procedures.

7.1.12.1. (Added) Products (hard copy) will be annotated with compliance status and next due date/time if MIS or MSAT is down for more than 48 hours.

7.1.12.2. (Added) Refer to QA Website for manual JCN assignment. Manual JCNs will be used in the event of IMDS-central database(CDB) downtime exceeding 48 hours.

7.2.2. PS&D ensures pre-dock aircraft document reviews (ADR) are performed, and printed in the weekly maintenance plan.

7.2.2.1. As a minimum, PS&D, aircraft dedicated crew chief (DCC)/assistant dedicated crew chief (ADCC), aircraft section chief or designated representative, Aircraft Maintenance Unit (AMU)/Equipment Maintenance Squadron (EMS)/Composite Maintenance Squadron (CMS) production supervisors, inspection section dock chief or designated representative, Engine Inspection Element and EM will attend pre-dock meetings.

7.2.2.1.1. PS&D will send AF Form 2410 , *Inspection/TCTO Planning Checklist*, to applicable parties in paragraph **7.2.2.1**, this supplement, 5 duty days prior to scheduled pre-dock meeting. Recipients will respond no later than two days prior to meeting, negative replies required.

7.2.3.1. (Added) PS&D ensures post-dock ADRs are performed. Post-dock ADRs will be coordinated between the dock chief and the scheduler on the day the aircraft is to be released from inspection.

7.2.3.2. (Added) The Inspection Section will inform the PS&D, a minimum one day prior to the aircraft's post-dock meeting. PS&D will coordinate between the crew chief, section chief, production superintendent and dock chief to establish the time and location of the meeting.

7.2.5.2. Refer to paragraph **1.4.3.1**, this supplement, for major maintenance request procedures.

7.10.7. Training will be provided by PS&D prior to access to any job standard master listing (JML) maintenance MIS screens. Any questions or training on their usage contact PS&D.

8.3.14. The following actions are required when deferring a discrepancy for depot maintenance:

8.3.14.1. (Added) PS&D depot waiver/deferment message is maintained in the aircraft historical file.

8.3.14.1.1. (Added) The AMU will: Create a work center event (WCE) on a Red Dash stating "QA review for deferment to depot required in accordance with TO 00-25-107, *Maintenance Assistance.*" Assign the WCE to work center "MXGQA" for the 517 AMU, "MXQH" for 962 AMU and "MGQF" for the 90 and 525 AMU.

8.3.14.1.2. (Added) QA will: Maintain a log of reviewed and verified discrepancies.

8.16.2.6. The 3 OG Functional Check Flight (FCF) Program Manager (FCF PM) will oversee the 3 WG FCF program in accordance with AFI 21-101 and review and implement updates to FCF tests provided by squadron FCF PM's. Test will be maintained and results filed by 3 OG/ OGV.

8.16.2.7. (Added) Flying Squadron FCF PM will:

8.16.2.7.1. (Added) Solicit nominations for highly qualified aircrew from squadron commanders to replace FCF aircrew within 90 days of date estimated return from overseas (DEROS), or when removal from FCF status is imminent.

8.16.2.7.2. (Added) Oversee the squadron FCF aircrew certification and currency requirements. Provide updated FCF currency expiration dates to the QA FCF manager when aircrews renew their currency. Ensure squadron Stan/Eval provides updated "Letter of X's" to the QA FCF manager.

8.16.2.7.3. (Added) Annually review and make recommendations to the 3 OG FCF PM for any changes to the FCF test. Provide any updates to information in this instruction to the 3 OG FCF PM.

8.16.2.7.4. (Added) Maintain a squadron FCF binder and accomplish Mission Performance Checklists. Only the applicable portions (FCF, operational check flight (OCF) and High Speed Taxi paragraphs) of the regulations need to be included in this binder. The 3 MXG/MXQ can provide updates to the MDS specific -6. All other -6CF, -6CL and so forth, are kept by OGV.

8.16.2.8. (Added) The Flying Squadron will coordinate all operational aspects of FCF scheduling and execution.. Fighters require a qualified supervisor of flying (SOF) on duty.

8.16.2.8.1. (Added) The AMU production supervisor will immediately notify MOC with changes to aircraft crew-ready times.

8.16.2.9. (Added) FCF Aircrew will:

8.16.2.9.1. (Added) Determine the flight profile for a limited FCF profile in conjunction with the Squadron Commander, Operations Officer, and QA on the extent of the tailored profile. Final approval will be requested from the 3 OG/CC. If events have changed since the squadron notified the OG/CC, ensure he/she is informed of changes to the flight profile.

8.16.2.9.2. (Added) Ensure weather requirements are met in accordance with the FCF/OCF Decision Matrix in this supplement and TO 1-1-300, *Acceptance/Functional Check Flight and Maintenance OPR Checks*.

8.16.2.9.3. (Added) Coordinate with the production superintendent to schedule QA for a forms review/brief time.

8.16.2.9.4. (Added) Upon completion of the FCF, verify with 3 MXG/MXQ that all checklists are completely filled out. Additionally, all open write-ups will be debriefed and written up in the AFTO 781A/IMIS Electronic Forms. The 3 MXG/MXQ will verify status of the FCF with aircraft commander and verify the paperwork is complete.

8.16.2.9.5. (Added) Monitor personal qualification/currency requirements and coordinate training before currency lapses. Update QA FCF manager with currency expiration dates.

8.16.3.3.1. (Added) Establish a brief history of maintenance on an FCF/operational check flight (OCF) brief sheet. The inspecting QA representative will review and stamp all inspected forms and accomplish a quality verification inspection (QVI) on the FCF aircraft. A 30 or 90-day calendar QVI will be accomplished after 30 or 90-days downtime for an OCF aircraft. QA QVIs for FCF aircraft for training purposes that have not been impounded or experienced any malfunctions, may be waived by the QA Superintendent or designated representative.

8.16.3.3.2. (Added) Ensure the FCF checklist is kept with the aircraft forms until an FCF aircrew has accepted the aircraft and all applicable checklist items have been accomplished.

8.16.3.3.3. (Added) Provide assistance to transient aircrew flying FCFs/OCFs from Joint Base Elmendorf-Richardson (JBER) to include briefing on FCF/OCF procedures.

8.16.3.3.4. (Added) The 517 AS/quality assurance representative (QAR) C-12 representatives will be responsible for all FCF, OCF, and In-flight Operational Check and High Speed Taxi QA responsibilities.

8.16.5.2. (Added) Aircrew FCF Training Requirements. Upon completion of training, a certification letter (see **Attachment 5**) will be signed by the squadron commander and endorsed by the 3 OG/CC. File all certification letters with the 3 MXG/MXQ QA FCF manager.

8.16.5.3. (Added) Before entering FCF upgrade, the following qualifications must be met:

8.16.5.3.1. (Added) C-17 pilots and loadmasters will be instructor qualified.

8.16.5.3.2. (Added) F-22 pilots will be experienced and flight lead qualified.

8.16.5.4. (Added) FCF Aircrew will review all applicable publications. These are maintained by the squadron FCF PM in the continuity binder or may be found at OGV.

8.16.5.5. (Added) Aircrew will take an initial written examination administered by the 3 OG Standardization and Evaluation office (3 OG/OGV). The minimum passing score is 85 percent, and the results will be kept on file at 3 OG/OGV.

8.16.5.6. (Added) Aircrew will receive a briefing from the 3 OG FCF PM or the squadron FCF PM in his/her absence on 3 WG FCF policies, procedures and the FCF profile. If the 3 OG FCF PM is not qualified in the upgrade aircraft, the flying squadron FCF PM will also brief airframe specific procedures and considerations.

8.16.5.7. (Added) Aircrew will accomplish a full FCF profile in the simulator with a current and qualified FCF crewmember observing/instructing for the corresponding position (simulator not applicable for C-12 pilots). If a simulator is not available, ground training and a full briefing of the profile using the -6CF must be accomplished the day prior to the FCF sortie.

8.16.5.8. (Added) All prerequisite training as detailed in **Attachment 6.** *Functional Check Flight Upgrade Program*, will be accomplished before the first FCF training sortie.

8.16.5.8.1. (Added) C-17 FCF crews require only a simulator to complete their training and do not require an actual sortie. In this instance, the simulator will be the last item accomplished during the upgrade.

8.16.5.9. (Added) The squadron commander may include a written waiver to the FCF training flight requirements for previously qualified FCF aircrew. All prerequisites will still be accomplished before submitting an FCF certification letter.

8.16.5.10. (Added) Initial FCF checkout requires a full profile be flown. If a full profile is not accomplished due to limitations and restrictions beyond the control of the squadron, certification of aircrew will be at the discretion of the squadron commander. Based upon the amount and type of unaccomplished tasks, the commander may waive the need to complete the profile on a subsequent sortie.

8.16.5.10.1. (Added) A chase aircraft not requiring an FCF or operational check is used for single seat aircraft.

8.16.5.10.2. (Added) Crewmembers for multi-seat aircraft will fly with an FCF certified crewmember from the corresponding crew position. A current and qualified FCF pilot will be the copilot during an FCF pilot training sortie.

8.16.5.11. (Added) If an aircraft is due an actual FCF for maintenance problems, 3 WG/CC approval is required to use the aircraft for initial FCF pilot checkout.

8.16.5.12. (Added) Squadron Stan/Eval will track the FCF qualification on the squadron "Letter of X's" (qualifications) and provide updated Letter of X's to the QA FCF manager.

8.16.6.3. (Added) The 3 OG/CC approval is required to deviate from these configurations.

8.16.6.3.1. (Added) C-12 and C-

17. The FCF pilot will determine fuel load.

8.16.6.3.2. (Added) A full FCF profile will be attempted anytime there are conditions requiring an FCF and during FCF upgrades unless a limited profile is approved by 3 OG/CC. Copies will be forwarded to 3 MXG/MXQ, prior to QA briefing the aircrew.

8.16.6.4. (Added) E-3 Requirement for FCFs. FCFs of unit assigned E-3 aircraft will not be conducted by the 962 AACS due to the lack of FCF certified aircrews. This is waiverable by the 3 OG/CC in accordance with AFI 21-101, paragraph **8.19**, CAF sup. If an FCF is required by

USAF regulation, TO guidance, or is requested by the 962 AACS/CC (and the 3 OG/CC gives approval), an FCF certified aircrew from another unit will accomplish the FCF.

8.16.6.5. (Added) Crews assigned to FCF 3 WG E-3 aircraft will follow guidance established by their respective wing, numbered air force, major command, and USAF TOs and regulations in coordination with 3 WG QA.

8.16.7. If the necessity arises for an FCF during a temporary duty (TDY) when an FCF aircrew is not available, the detachment/mission commander will contact the 3 OG/CC for FCF approval and designate the most highly qualified aircrew to fly the FCF. The detachment commander will ensure the aircrew is thoroughly briefed on the FCF profile, has reviewed applicable portions of TO -6CF-1, has had a full brief from the local QA, and is familiar with local FCF procedures. The aircrew will only perform those checks required to release the aircraft for normal flying. Flying squadrons will deploy with a copy of dash 6 TOs (-6, -6CF-1, -6CL-1). The selected aircrew will consult with a current FCF aircrew member before flying an FCF profile.

8.16.7.1. (Added) Coordinate with QA one day prior to schedule QA forms review on all FCFs/OCFs.

8.16.8. (Added) FCF Crew Complement Qualification Requirements. FCF aircrew will be FCF current and qualified. The following crew complements will be used during FCFs:

8.16.8.1. (Added) C-12. FCF pilot and a basic copilot.

8.16.8.2. (Added) C-17. 2 FCF pilots and 2 FCF loadmasters; one of each must be from OGV, unless waived by the 3 OG/CC.

8.16.8.3. (Added) F-22. FCF pilot.

8.16.9. (Added) FCF Crew Currency Requirements:

8.16.9.1. (Added) Flying squadron commanders will verify FCF aircrew members are qualified, trained, and current in accordance with all directives.

8.16.9.2. (Added) C-12s have no currency requirements. An FCF crew will brief the sortie profile using the -6CF the day before accomplishing any actual FCF sortie.

8.16.9.3. (Added) C-17s have no currency requirements. An FCF crew will accomplish an FCF profile in the simulator within one week prior to accomplishing an actual FCF sortie.

8.16.9.4. (Added) F-22 FCF currency is 90 days. To regain currency, the crewmember will accomplish an FCF profile in the simulator with a current and qualified FCF pilot. In the event that a simulator is not available, the pilot will fly an FCF profile in a jet not requiring an actual FCF with a current and qualified FCF pilot either in the aircraft or in chase. Until an F-22 simulator is constructed at JBER, F-22 currency may be extended to 180 days by the 3 OG/CC.

8.16.10. (Added) Reference **Attachment 7** FCF/OCF Decision Matrix.

8.17.2. (Added) Operational Check Flights**.**

8.17.2.1. (Added) OCF Crew Qualification Requirements:

8.17.2.1.1. (Added) C-12. Aircraft commander will be instructor qualified.

8.17.2.1.2. (Added) C-17. One pilot and one loadmaster should be Instructor qualified. 517 AS/CC can waive this requirement.

8.17.2.1.3. (Added) E-3: aircrew will consist of an instructor pilot and an instructor engineer for airframe related check flights and an applicable crew complement for mission systems check flights.

8.17.2.1.4. (Added) F-22: pilots will be experienced and flight lead qualified.

8.17.2.1.5. (Added) If the above qualifications cannot be met for aircraft off-station, the most experienced aircrew will conduct the OCF at the discretion of the squadron commander.

8.17.2.2. (Added) The squadron will gain specific approval by letter or electronic message from the SQ/CC for all non-standard OCF profiles including, but not limited to, a mission flown in conjunction with an OCF or flying an aircraft in a training line versus an OCF line . Additionally, OCFs on weekends or holidays require 3 OG/CC approval (does not apply to AFRC/ANG scheduled weekend flying).

8.17.2.3. (Added) Reference **Attachment 7** FCF/OCF Decision Matrix.

8.17.3. (Added) The AMU will gain specific approval by letter or electronic message from the 3 OG/CC and the 3 MXG/CC for use of maintenance personnel onboard aircraft during in-flight operational checks.

8.18.2. (Added) Timing of any check should be such that if a barrier engagement or other problem occurs, it will not affect fighter operations. A SOF will be on-duty during F-22 high speed taxi checks.

8.18.3. (Added) Specific 3 OG/CC approval is required to exceed 100 knots calibrated air speed (KCAS) during the high speed taxi. If approved, and equipped with a tail hook, coordinate through the SOF to remove the approach end cable so that it isn't engaged when initiating braking and lowering the tail hook. Departure end cables will be raised for fighter high speed taxi checks.

8.18.4. (Added) Request a DD Form 365-4, *Weight and Balance Clearance Form F - Transport/Tactical*, from the Weight and Balance noncommissioned officer.

8.19.1.10. (Added) Each AMU will:

8.19.1.10.1. (Added) Schedule all aircraft requiring weight and balance (W&B) with QA at least 2 weeks prior to the actual weigh due date, and ensure aircraft requiring W&B checks are included in the monthly/weekly maintenance plan.

8.19.1.10.2. (Added) Schedule Chart A and provide required assistance to the QA W&B technician for accomplishment of DD Form 365-1, *Weight Checklist Record, "Chart A" – Basic*, inventories.

8.19.1.10.3. (Added) Notify QA when equipment that affects W&B computations is removed or installed and the aircraft is to be flown. Additionally, notify QA when aircraft are to be flown with removed equipment, that is, gun system components, mission equipment, or line replaceable units. Notification is required at least twelve hours prior to any scheduled flights to allow sufficient time to compute the effect on the center of gravity (CG).

9.2. Units will use locally developed impoundment checklist available on the QA web page.

9.3.3. Impoundment authority will not be delegated below the rank of SMSgt.

9.3.5. For inadvertent release or explosive mishap, a maintenance officer or experienced 2WXXX senior noncommissioned officer (SNCO) with knowledge of the affected system will be appointed the impoundment official.

9.4.2. When a flight or ground mishap has the possibility of becoming a safety investigation in accordance with AFI 91-204, the impoundment official/squadron supervision will coordinate with the 3 WG Safety office on maintenance actions required to complete the investigation.

9.4.11.4. (Added) Additional Impoundment Requirements:

9.4.11.4.1. (Added) Lost tools or equipment on, or in close proximity to, an aircraft or uninstalled engine, not found after an initial 2-hour search.

9.4.11.4.2. (Added) Foreign object damage (FOD). Aircraft/engines with verified FOD will be impounded. Engines that are within repairable limits according to the appropriate TO will not be impounded. The purpose of the impoundment is to preserve evidence and ensure no one operates unsafe equipment.

9.4.11.4.3. (Added) Any third time repeat not mission capable (NMC) minimum essential subsystems list (MESL) item.

9.4.11.4.4. (Added) Uninstalled engines will be impounded if any of the following incidents occur: fire, augmenter burn through, turbine or compressor damage due to failure of any engine component, engine gearbox failure.

9.4.11.4.5. (Added) Uncorrectable internal fuel imbalance that exceeds maintenance technical data limits as second repeat/recur.

9.5.1. Before assuming any impoundment official duties, assigned personnel will attend the locally developed impoundment official training through QA.

9.6.6.1. Items related to the impoundment will be tagged with an AFTO Form 350 that has a red border or stamped with "IMPOUNDED" in red. A note in Block 15 of the tag will indicate the unit was removed from impounded equipment.

9.6.11.1. (Added) If approved, the impoundment release authority will clear the forms by entering "Investigation Complete, all corrective actions have been reviewed, aircraft or equipment released," referring to original discrepancy in the "corrective action" block, signing the "inspected by" block and initialing over the Red X symbol.

9.6.14. (Added) If the decision is made to impound the aircraft, a qualified flight control team will be established and the aircraft worked as directed by the impound official.

9.8. (Added) Maintenance Incident Reporting Procedures:

9.8.1. (Added) Upon notification of an incident, MOC will initiate the appropriate EAC and notify QA.

9.8.2. (Added) The owning unit is responsible for providing the initial incident report (QA web page) to QA within 12 hours. All incidents/mishaps require a completed report. The Fed Log (exchange price) including labor will be used in estimating total costs for the report.

9.8.3. (Added) QA will e-mail the PowerPoint presentation and summary of incident report to 3 MXG. After reviewing the report, MXG supervision will return the approved incident report and PowerPoint presentation to QA.

9.8.4. (Added) Product improvement manager (PIM) loads incident information to the PACAF incident reporting web page.

10.2.1.1.1. (Added) To standardize CTK procedures within 3 MXG, 517 AMU will follow guidance from AFI 21-101/CAF Sup 1.

10.2.1.3. The CTK custodian will maintain a listing of all applicable warranted tool manufacturers. All broken/removed tools will be assessed for warranty against this listing before disposal. All unserviceable warranted tools will be separately stored and inventoried by the CTK custodian. Units will develop a method for tracking unserviceable warranted tool disposition (replaced, repaired, or disposed). Tools that have expired warranties may be disposed of accordingly.

10.2.1.5. Changeover of CTKs or other items signed out from the support section will be accomplished by the receiving and losing technician performing an inventory at the job site and documenting the CAF Form 140, *CTK Inventory and Control Log*, or an AF Form 1297, . *Temporary Issue Receipt*. The losing technician (prior to departing the work center/area) will deliver the CAF Form 140 or AF Form 1297 to the support section. This procedure will not exceed two shifts. **EXCEPTION For – Test Measurement and Diagnostic Equipment (TMDE):** When calibration of the hush house is accomplished, a complete inventory of the CTK will be done at each shift change (using CAF Form 140) until calibration is complete. The two-shift limit and hand receipt does not apply.

10.3.1. CTK custodians will maintain a master CTK continuity binder for each area of responsibility. If a tab is not required, identify the section as not required. Sub-located sections will be identified with use of the DD Form 2861 *Cross Reference*. The binder will contain:

10.3.1.1. (Added) Tab A. Letters of appointment for CTK custodian.

10.3.1.2. (Added) Tab B. AFI 21-101/3Wg Sup 1, Chapter 10.

10.3.1.3. (Added) Tab C. Master tool room master inventory lists (MIL).

10.3.1.4. (Added) Tab D. Completed CAF Form 145, *Lost Tool/Object Worksheet*.

10.3.1.5. (Added) Tab E. Annual tool inspection log.

10.3.1.6. (Added) Tab F. Letters of authorization for locally designed tools/equipment and consumable materials listing.

10.3.1.7. (Added) Tab G. Spare Tool Inventory List.

10.3.1.8. (Added) Tab H. List of explosion-proof lights by CTK number, type of light, and inspection due dates.

10.3.1.9. (Added) Tab I. Locally developed missing/removed tool log (3 MXG Form 146, *Missing/Removed Tool Log*) for removed precision measurement equipment laboratory (PMEL), broken and damaged/serviceable tools.

10.3.6.3.1. (Added) Due to the large quantity of consumable/hazardous material (HAZMAT) use during low observable (LO) maintenance, the LO section will track consumables and daily use HAZMAT items issued from the support section using a locally developed tracking sheet. The tracking sheet will specify the type of consumable/HAZMAT item and quantity issued to

each individual during the course of their shift. Personnel working outside of the LO facility will keep a copy of the tracking in their work area.

10.3.6.5.1. AFTO Form 244, *Industrial/Support Equipment Record*, will be used to document broken/damaged/removed items for all technical equipment (TE) and support equipment (SE) requiring an AFTO Form 244. TC-MAX will match the TE and SE AFTO Form 244 documentation.

10.3.6.5.1.1. (Added) All CTKs used for dispatch (shop to flight line/hangar) will have a FOD bag inside or attached to the CTK. FO will be put in FOD bag during maintenance and then removed from FOD bag prior to turning in CTK.

10.3.6.5.2. (Added) The 3 MXG Form 146 will be used with each dispatch able CTK. Tool kits/sets are exempt (for example, drill index, reamer set, and tap and die sets).

10.3.10. Employees without employee numbers (that is, AF, contractors, XYZ Company) will mark all individually issued equipment with first name initial, last name, organization and contact phone number.

10.3.13. (Added) Metal CTKs will not be directly placed on any aircraft exterior surface.

10.4.2.1. Whenever a tool bag is used; a complete inventory of the tool bag will be accomplished (pre-use and post-use). This concept must be strictly followed to avoid impounding multiple aircraft for one missing tool. Tools will not be stored or carried in pockets. Use appropriate tool bags, trays, or boxes.

10.4.4. (Added) Depot field teams, aircraft contractors, and factory representatives must have a tool control program in place for all tools and equipment brought to accomplish all aircraft and/or aircraft component work. Tool control procedures will be adhered to in accordance with AFI 21-101/CAF Sup 1, and this supplement.

10.5. Crash recovery trailers and metals technology welding trailer will be maintained, controlled, and inventoried in the same manner as a CTK.

10.5.1. Each flight chief/AMU OIC/AMU Superintendent will assign equipment identification designator (EID) control numbers to subordinate work centers (see **Attachment 8**). An information copy of the control number listing will be provided to QA. Only tools properly marked and accounted for in accordance with AFI 21-101 (worldwide identification number ((WWID) will be used on aircraft, aircraft components, and equipment. Tools used and transported within the flight line areas but from agencies outside of the 3 MXG will have an identification marking reflecting which agency the tool belongs to.

10.5.1.3.1. All containers and pouches used for small items will list each item including the container (Containers will be marked “Pieces + Container” (that is, 16 pieces + 2 piece case) on the CTK MIL.

10.5.6.1. (Added) Diagonal cutters, side cutters, safety wire pliers, and similar pliers will have the jaws either potted with room temperature vulcanized rubber or equipped with jaw pads from the manufacturer. Pliers will be checked after each use to ensure all foreign objects (FO) are removed from the pliers and discarded.

10.6.2. (Added) When a locally developed tool (LDT) is desired, an approval request letter will be submitted to the group commander or designated representative with the following

attachment: Attachment will list each LDT, nomenclature and the specific tasks for which it will be used; it will contain digital pictures of each LDT.

10.6.3. (Added) LDTs used for lifting purposes (load bearing) will be load tested and non-destructive inspection (NDI) inspected annually. All personnel will review the documentation prior to use.

10.7. When two or more work centers operate a single tool room/support section, they will consolidate all tools, CTKs, and TE to operate as one cohesive unit.

10.8.1. Any lost individually issued equipment (that is, ear defenders, reflective belts, and so forth) must be reported in accordance with lost tool procedures.

10.8.1.2. When a tool/object is lost in the cockpit/flight deck, the following actions will be required before the aircraft is released if the item is not found:

10.8.1.2.1. For F-22s, Conduct a thorough search of the cockpit area by removing any applicable panels or equipment. Vacuum the affected cockpit area. Remove or place seats in maintenance position to facilitate the search. Call QA to perform the final search.

10.8.1.2.2. (Added) For C-17/E-3. Conduct a thorough search of the flight deck area by removing any applicable panels or equipment. Call QA to perform the final search.

10.8.1.4. The investigating officer (IO) will be a qualified impoundment authority/official. The IO is responsible for performing and coordinating search for lost tool/item and assist in completing the CAF Form 145. The investigation will encompass factors that lead to the loss of tool/item and any delays in discovery and reporting of missing tool/item.

10.8.1.5. A thorough search for the item will be immediately initiated by the losing organization. If any line replaceable unit (LRU) or equipment has been released from the shop, the LRU/equipment will be located and searched. If not located, he/she will immediately notify his/her supervisor, who will, in turn, ensure the appropriate levels of supervision are notified, to include the operations officer/maintenance superintendent and the MOC.

10.8.1.5.1. (Added) MOC will maintain the lost tool control log and issue control numbers. The log will consist of name of individual who lost the tool/item, unit assigned, equipment/aircraft serial number, CTK number, nomenclature of the lost tool/item, date and time item was lost, specific shop area/flight line (aircraft location). If applicable, the impoundment authority/official name, rank and telephone number.

10.8.1.5.2. (Added) Lost tool/item **NOT INVOLVING** an aircraft/equipment, follow the procedures for CAF Form 145, *Lost Tool/Object Worksheet*:

Table 10.1. Lost Tool/Item NOT INVOLVING an Aircraft.

Found?	Sqd Ops Officer/MX SUPT reviews/signs CAF Form 145	QA Reviews/Signs	CAF Form 145 (Block #8) Signature:
No	Yes, Block #5	Yes, Block #7	MXG/CC, MXG/CD
Yes	Yes, Block #8	Yes, Block #7	Sqd Ops Officer/MX SUPT

10.8.1.5.3. (Added) Lost tool/item **INVOLVING** an aircraft/equipment, follow the procedures for CAF Form 145 and AFTO Form 781A (IMIS), *Maintenance Discrepancy and Work Document*/AFTO Form 244, *Industrial/Support Equipment Record*:

Table 10.2. Lost Tool/Item INVOLVING an Aircraft.

Found?	Red X for lost tool/item 781A "Inspected" by	Sqd Ops Officer/MX SUPT reviews/signs CAF Form 145	QA Reviews/Signs	CAF Form 145 (Block #8) Signature:
No	Sqd Ops Officer/MX SUPT	Yes, Block #5	Yes, Block #7	MXG/CC, MXG/CD
Yes	Qualified 7-level	Yes, Block #8	Yes, Block #7	Sqd Ops Officer/MX SUPT

10.8.1.5.3.1. (Added) If the aircraft/equipment was impounded, units must follow procedures in AFI 21-101/CAF Sup 1 and this supplement in clearing impoundment documentation in aircraft forms/IMIS.

10.8.1.5.3.2. (Added) If the tool/item is found at a later date, an edited copy of the original CAF Form 145 must be sent to QA for forwarding to the wing FOD manager and 3 MOS/MXOOS.

10.8.1.5.3.3. (Added) Found tools/items: any time a tool or other item is found, contact the 3 Wing FOD Manager.

12.1.15. See **Attachments 9. 10 , 11, and 12.**

12.6.1. F-22 load training will be conducted inside an auxiliary power unit (APU) run capable hangar (that is, Hangar 17) to the maximum extent possible. Any deviation from this will be coordinated through the weapons standardization (WS) superintendant or MDS assigned LSC.

12.7. Academic Training. Recurring academic training will be conducted every 12 months.

12.12.2.4.3. A demonstrated lack of technical proficiency by an individual load crew member will result in a failed rating.

12.12.2.4.5. Intervention by an evaluator during loading to prevent injury to personnel or damage to equipment that is induced by a load crew member will result in a failed rating.

12.17.1. (Added) WS is the wing focal point for armament system servicing of transient aircraft. They will provide on-equipment servicing, technical data, and training, as necessary. WS will coordinate with transient alert to procure applicable safety devices in sufficient quantities to support MDS aircraft known to transit JBER. Transient alert will notify the MOC anytime a transient aircraft requires munitions arming, de-arming, loading, or unloading to facilitate required maintenance. WS will provide the MOC with a current recall roster. The MOC will first attempt to contact WS by phone or radio before using the roster. Sites for transient aircraft munitions operations will be in accordance with 3WGI 13-203, *Airfield and Air Traffic Control Procedures*.

12.17.2. (Added) Impulse Cart Storage. Impulse cartridges removed from transient aircraft will be temporarily stored in the 90 AMU Weapons Section impulse cart locker. The alternate location is the RED FLAG Weapons Section impulse cart locker. These cartridges will be sealed

in a container clearly identified as transient aircraft carts. The appropriate weapons section chief will be notified any time transient carts are placed in courtesy storage.

13.10. (Added) When a mishap occurs, involving explosives, immediately notify maintenance operations center, which in turn will run applicable EAC. Aircraft involved in a mishap will be impounded in accordance with AFI 91-204, *Safety Investigations and Reports*. A designated 3 WG representative will respond to the aircraft mishap scene and refer to 3 WG OPLAN 91-1, *Investigation & Reporting Plan for Flight, Ground and Weapons Mishaps*.

13.10.1. (Added) Procedures for munitions loading preparation.

13.10.1.1. (Added) The 517 AMU Production Superintendent will:

13.10.1.1.1. (Added) Contact MOC, Load Team, and Munitions Flight (Munitions Control), as early as possible, to confirm the aircraft tail number, aircraft location, required flare payload requirements, and the required delivery time of loaded magazines to the aircraft.

13.10.1.1.2. (Added) Coordinate with the load team to start stray voltage checks at least 30 minutes prior to magazine delivery time.

13.10.1.1.3. (Added) Coordinate with Munitions Control and load crew for delivery time.

13.10.1.2. (Added) Procedures for Requesting, Transporting, and Uploading/ Downloading Flare Modules:

13.10.1.2.1. (Added) Delivery times for flare loaded trailers will be coordinated between the production superintendent and Munitions Control.

13.10.1.2.2. (Added) At the 517 AMU production superintendent's request, MOC will contact Munitions Control and request delivery/pickup of flare magazines to/from the aircraft.

13.10.1.2.3. (Added) MOC will notify Base Operations, Fire Department, and Security Forces when explosives transport is started/completed. MOC must also ensure Fire Alarm Communications Center is made aware of the location of explosives awaiting upload/pickup, upload/ download operations, and explosives-loaded aircraft on the flight line.

13.10.1.2.4. (Added) Total personnel authorized in the loading area, including casuals, is six.

13.10.1.2.5. (Added) Do not remove explosives lot number or date of installation markings on the side of loaded magazines.

13.10.1.2.6. (Added) Load team will notify the expediter, production superintendent and MOC when upload/download is complete. MOC will notify Base Operations and Fire Alarm Communications Center when upload/download is complete.

13.10.1.2.7. (Added) MOC will notify Base Operations and Fire Alarm Communications Center of explosives-loaded aircraft arrival at or departure from parking spot.

14.6.2. The 3 MXG Wing Avionics Manager is the base Aircraft Structural Integrity Program (ASIP) project officer. The Avionics Manager will coordinate between all applicable agencies responsible for maintaining ASIP equipment to ensure equipment is repaired and reinstalled in aircraft as soon as possible. The Wing Avionics Manager will also review all ASIP correspondence and disseminate information to the respective AMU. Reference 3WG MOI 21-170, *Aircraft Structural Integrity Program*, which prescribes responsibilities and procedures for maintaining an effective ASIP.

14.8.12. (Added) The 3 WG General cannibalization (CANN) procedures.

14.8.12.1. (Added) The production superintendent will:

14.8.12.1.1. (Added) Ensure component has been verified zero balance on base prior to physical removal. **EXCEPTIONS:** Red ball maintenance covered in this instruction.

14.8.12.1.2. (Added) Authorize CANN action within squadron resources and coordinate with the jet engine intermediate maintenance (JEIM) section chief for an engine to aircraft CANN and notify the AMU Combat Oriented Support Organization (COSO) when the decision to CANN is made.

14.8.12.1.3. (Added) Determine the CANN source. If it's necessary to CANN from another squadron or from an in-shop activity, the production superintendent will coordinate with the respective flight supervisor. Once a donor source has been established, notify AMU COSO. COSO will contact the donor squadron or back shop to initiate CANN action.

14.8.12.1.4. (Added) As applicable to specific aircraft. Coordinate with EMS repair and reclamation (R&R)/aircraft structural maintenance (ASM) for flight control surfaces that require x-ray prior to CANN to ensure no defects are noted.

14.8.12.2. (Added) Technicians removing the part will:

14.8.12.2.1. (Added) Ensure removal and replacement of serially controlled and time change items are properly documented and reported to the PS&D.

14.8.12.2.2. (Added) For engine components, ensure changes of serially controlled and time change items are documented and reported to engine management (EM).

14.8.12.2.3. (Added) Ensure removal action is accomplished in MIS as soon as possible after the component is removed. Create separate MIS actions for all parts removed to facilitate other maintenance (FOM).

14.8.12.3. (Added) Supply will:

14.8.12.3.1. (Added) Input CANN data into applicable MIS. (that is, "T" and "U" actions).

14.8.12.3.2. (Added) Document the CANN log.

14.8.12.3.3. (Added. Change data on the AF Form 2005, *Issue/Turn-In Request*, to reflect the CANN.

14.8.12.3.4. (Added) Notify Base Supply mission capable ((MICAP) Section) of CANN action, including the new mark for, job control number and delivery destination for the part or asset.

14.8.12.3.5. (Added) Provide a copy of the AF Form 2005 to the losing organization's supply representative, if the part is coming from another organization.

14.8.12.3.6. (Added) Notify the production super when the serviceable item is received in the tail number bin (TNB) and load availability of asset in MIS and forward to performing work center.

14.8.12.3.7. (Added) Will process engine CANNs from engine to engine using the CANN job control number. The Propulsion Flight will follow up on all "T" and "U" actions with appropriate squadron supervision. Units are responsible for clearing the due-in-from-maintenance (DIFM) assets.

14.8.12.4. (Added) PS&D will:

14.8.12.4.1. (Added) Ensure a pre-dock is completed prior to the start of CANN status and a post-dock is complied with before the aircraft is returned to the AMU for its first flight.

14.8.12.4.2. (Added) Coordinate with each AMU to ensure the designated CANN aircraft inputs and rebuilds are staggered.

14.10.5.5. See 3WGI 21-132, *Crash Recovery/Hot Brake Procedures,* for crashed, damaged, or disabled aircraft recovery (CDDAR) specific responsibilities.

14.11. Each AMU will appoint a primary and alternate dropped object prevention (DOP) program monitor. All appointments will be made by letter, signed by the squadron commander, and forwarded to the 3 WG DOP Program Manager/FOD noncommissioned officer (NCO).

14.11.1.4. Units will:

14.11.1.4.1. (Added) AMU production superintendent/expediter will immediately notify MOC of the incident. Gather all pertinent facts on the dropped object incident, and complete the dropped object checklist (located on QA web page). Upon checklist completion, forward copy to 3 WG FOD/DOP Program Manager.

14.11.1.4.1.1. (Added) Perform the initial investigation and coordinate all actions with the 3 WG DOP Program Manager/FOD NCO. If the incident is a Class C or higher, Flight/Ground Safety will investigate at their discretion.

14.11.1.4.2.1. (Added) Review aircraft forms, historical records, interview crew chiefs and other involved maintenance/flight personnel as required, and consider any possible causes. Information will be compiled and forwarded to 3 WG FOD/DOP Program Manager for review, reporting, and record keeping.

14.11.1.4.2.2. (Added) Make recommendations to the AMXS whether a deficiency report (DR) should be submitted.

14.11.1.4.3. (Added) Each AMU will complete DR paperwork, if required, and forward to AMXS. All DR documents will be submitted to 3 MXG product improvement manager as soon as possible.

14.11.1.4.4. (Added) The MOC will:

14.11.1.4.4.1. (Added) Upon notification of a dropped object, immediately notify the following organizations: 3 MXG/QA, affected unit's production supervisor, 3 WG DOP Program Manager/FOD NCO, 3 WG Safety Base Ops, 3 MXG/CC, 3 MOS/CC, and the 3 MXG/CEM (alt night hawk), Weapons Manager(if weapons related).

14.11.1.4.4.2. (Added) Immediately pass all known information concerning the dropped object to the 3 WG Command Post for home line transmission to PACAF, in accordance with AFMAN 10-206, *Operational Reporting*.

14.11.1.4.5. (Added) If a dropped object incident occurs while away from home station, Deployed AMU OIC, or designated representative, will accomplish 3 WG and host unit/installation requirements. TDY locations will accomplish DOP reporting for C-17 aircraft.

14.11.1.4.6. (Added) If QA is not deployed, the deployed AMU OIC/designated representative will be responsible for conducting the investigation, determining the cause, and providing a

complete report to AMXS. AMXS will forward report to QA upon AMU's return to home station.

14.11.1.4.7. (Added) If the deployment is expected to last longer than 5 duty days from the time the incident occurred, the deployed AMU OIC/designated representative will forward a preliminary report to AMXS, QA, and 3 WG DOP Program Manager/FOD NCO detailing all the available information regarding the incident.

14.14.8.3. F-22, E-3. Blended blades will be marked using layout dye to permanently identify damaged areas. FOD that's determined to be serviceable without blending will also be marked with layout dye.

14.15.6. Engine run-qualified personnel will be required to take an emergency procedures test semiannually. The emergency procedures due date is tracked using the appropriate MIS for all airframes assigned to JBER.

14.15.8.2. Decertified. Personnel who fail to comply with annual re-certification by the last day of the due month, fail any part of the re-certification procedures, or have not accomplished an engine run within the past 90 days (120 days for 517 AMU) will be decertified. Personnel will comply with AFI 21-101, paragraphs **14.15.6** (annual recertification) and **14.15.5.3** (practical demonstration) to become certified again.

14.15.10.1. (Added) General Engine Operating Instructions:

14.15.10.1.1. (Added) The supervisor/flight line expediter will:

14.15.10.1.2. (Added) If icy ramp conditions exist, notify AMU OIC/Mx Supt, or production superintendent to verify if engine run location is safe to operate engines.

14.15.10.1.3. (Added) Prior to engine start, provide the MOC with the aircraft tail number and location, reason for engine run, and name and employee number of engine operators.

14.15.10.1.4. (Added) Monitor complete run or provide ground observer with a hand-held radio to contact the MOC in case of aircraft radio failure, when expeditor vehicle not available on scene.

14.15.10.1.5. (Added) During a deployment, maintain a log of all engine runs. Upon return, the log will be provided to the unit training manager (UTM) for input into the MIS.

14.15.10.1.6. (Added) Engine run personnel will:

14.15.10.1.6.1. (Added) Stay in contact with the appropriate ground control throughout the engine run (except hush house).

14.15.10.1.6.2. (Added) In order to meet the certified limits of the open trim pad, whenever an engine is operated above idle, the opposite engine will not be operated above 85 percent N2. Additionally, both engines will not be advanced above 85 percent N2 simultaneously.

14.15.10.1.7. (Added) The MOC will:

14.15.10.1.7.1. (Added) Contact appropriate ground control for engine run clearance and then advises the supervisor or flight line expediter when run has been cleared.

14.15.10.1.7.2. (Added) Verify in the MIS that engine run personnel are qualified to run aircraft engines.

14.15.10.1.7.3. (Added) Update in the MIS, the latest engine run date for the individual running engines.

14.15.10.1.7.4. (Added) Maintain a MIS listing of all qualified engine run personnel, in case the MIS goes down. This listing will be updated monthly.

14.15.10.1.7.5. (Added) Provide ambient air temperature.

14.15.10.1.8. (Added) All personal authorized to operate engines are required to receive winter hazard training between 1 August and 15 September. A maintenance training flight (MTF) instructor, Air Force Engineering and Technical Service (AFETS) certifier, or the squadron certifier will conduct the briefing. The training will be tracked in the appropriate MIS for all engine run personnel

14.15.10.1.9. (Added) Engine run operator will ensure the engines are not operating until the following are complied with.

14.15.10.1.9.1. (Added) If icy ramp conditions exist, notify AMU OIC/Mx Superintendent/ production superintendent to verify if engine run location is safe to operate engines. When the aircraft run-up area is determined unsafe, aircraft needing engine run will be either positioned on a safe parking spot or the run will not be accomplished until the current location is determined safe.

14.15.10.1.9.2. (Added) Obtain the temperature and dew point from the supervisor/flight line expediter or MOC.

14.15.10.1.9.3. (Added) An area 25 feet in front and 5 feet to the sides and behind inlets will be cleaned prior to engine start.

14.15.10.1.9.4. (Added) During hours of darkness or winter icing conditions, **two** light-alls, with both flood lights operational, will be positioned out board of the wing tips and lights directed at the forward fuselage and engine area on each side. Heavy aircraft position the required light-alls in a safe location to obtain the required lighting to visual monitor the operating engine intakes for any ice buildup. A spotter will be used to monitor for ice buildup and to notify the engine run ground observer of ice buildup.

14.19.2.1. A separate FO inspection will be accomplished and documented prior to the flight.

14.19.2.1.1. (Added) During maintenance, reusable hardware will be placed in a cloth screw bag or suitable container. The screw bag/container will be marked as follows: aircraft tail number, component or panel number, exact quantity, and brief description of contents. The bag will be secured to the panel or component in a way as to make it visible. If items are too large for a standard screw bag, they will be placed in a suitable container and properly tagged with an AFTO form 350, *Reparable Item Processing Tag*.

14.19.2.1.2. (Added) Hardware and expendables will be strictly controlled. These items will be limited to the amount necessary to accomplish the specific task. Bench stocks will be strictly controlled and monitored in a secure area to prevent personnel from taking excess quantities. Bench stock will not be co-mingled. Scrounge or excess hardware collections are strictly forbidden.

14.19.2.4. Coveralls used for intake and exhaust inspections will be marked “INTAKE AND EXHAUST ONLY.”

14.19.2.6. Personnel will not wear headgear on the flight line. Exceptions to this rule are the balaclava, arctic issue pile/fleece cap, knit stocking cap, head sock, or on duty Security Forces personnel carrying arms. When worn within 25 feet of an operating jet engine, the arctic issue pile cap chinstrap will be secured under the chin, and the knit stocking cap and head sock will be pulled down over the ears.

14.19.2.6.4. (Added) Only 3 WG approved metal cleats are allowed to be worn on the flight line in accordance with 3WG Memorandum guidance on metallic cleat variance.

14.19.2.7. Flashlights equipped with rubber switch guards are permitted as long as the rubber guard is in good condition and does not pose a FOD threat.

14.19.2.9.1. (Added) F-22. A two-person concept for intake repair or intake rivet replacement is required. One person will monitor and account for all tools and hardware placed into the intake. The second person will accomplish the maintenance task. A FOD bag is required to secure debris. Use the *Intake Maintenance Checklist*, which is available on the QA web site. During intake repair or intake rivet replacement, the *Intake Maintenance Checklist* will be taped in plain sight. All tools and hardware will be documented on this form prior to being placed in the intake. The Low Observable Section will maintain the completed checklists for one year.

14.19.2.11. Units will conduct daily organized FOD walks of their respective areas for general cleanliness and housekeeping. These areas will include hangars, test cells, work areas, and respective aerospace ground equipment (AGE) equipment storage areas. The wing FOD manager, airfield management, and QA will monitor these areas to ensure adherence to FO free requirements.

14.19.2.11.1. (Added) Annual FOD Walks. At the discretion of senior wing leadership, an organized spring FOD walk may be conducted. All participating organizations are required to supply a SNCO, transportation, equipment, and personnel to police their assigned areas. Airfield Management (3 OSS/OSAM) will coordinate airfield closure and will provide personnel to ensure the airfield remains safe for the duration of the FOD walk.

14.19.2.12. Fighter units assigned to JBER will accomplish daily FOD walks prior to the first launch of the day. Heavy aircraft and rescue aircraft from the 176 ANG will accomplish weekly FOD walks of their respective areas (individual units are responsible for the organization and implementation of their respective FOD walks).

14.19.2.12.1. The 517 AMU is responsible for the general cleanliness and housekeeping of Taxiway "J" (adjacent to Hangar 18 to the entryway to Taxiway "D" FO line) and Taxiway "K" (from Taxiway "J" to the entry control line at the south end of the Firebird Ramp), as well as accompanying hardstands located on Taxiway "K"(when being used).

14.19.2.12.2. (Added) The 176 ANG is responsible for the general cleanliness and housekeeping of Taxiway "J" (from the front of Hangar 18 to the flightline perimeter gate adjacent to the west end of Hangar 11) and Taxiway "K" (from Taxiway "J" to the entry control line at the south end of the Herc ramp), as well as accompanying hardstands located on Taxiway "K" (when being used).

14.19.2.12.3. (Added) The 962 AMU will be responsible for the general housekeeping of Taxiway "B" (from Taxiway "J" adjacent to the 732 AMS, to the northern edge of Taxiway "M") as well as Hardstand 38, and Hardstand 6 (when being used).

14.19.2.12.4. (Added) The 90 AMU will be responsible for the general cleanliness and housekeeping of all aircraft parking spots located on the Red Ramp, and Tango Ramp (aircraft parking spots on Charlie Loop will be FOD walked when that section of the parking apron is projected to be used).

14.19.2.12.5. (Added) The 525 AMU will be responsible for the general cleanliness and housekeeping of all aircraft parking spots located on the Bulldog Ramp and any Taxi areas forward/aft/adjacent of Hangars 24 and 26.

14.19.2.12.6. (Added) RED FLAG-Alaska personnel will be responsible to inform visiting units to JBER based exercises of their responsibilities in regards to general cleanliness and housekeeping of their assigned aircraft parking areas. These areas (Red Flag West Ramp and Red Flag South Ramp) will be FOD walked by deployed personnel participating in the exercise when in use. The Wing FOD Manager and Air Field Management will monitor these areas to ensure adherence to FO-free requirements.

14.19.2.17.1. (Added) FO picker will be annotated on the vehicle's inspection form. **EXCEPTION:** Special purpose vehicles with space between tread exceeding one and a half inches are exempt from the requirement of being equipped with a FO picker but are still required to stop and complete a vehicle inspection prior to entering the airfield.

14.19.2.17.2. (Added) Additional equipment for vehicles, to include but not limited to chocks, FOD containers, ice scraper, extension cord, and any other vehicle related items, will be marked with the vehicle number and annotated on the vehicle inspection form.

14.19.2.17.3. (Added) Vehicles equipped with chains during winter conditions must be checked before and after each operation to ensure serviceability. When a broken chain is discovered, that vehicle will not be operated on the airfield until the chain is replaced or repaired. If links are missing, a search will be initiated to retrieve them. If they are not found, a magnetic sweeper will be requested through Airfield Management.

14.19.2.17.4. (Added) To prevent FOD hazard to aircraft, fire extinguishers that are carried on vehicles and equipment which operate on the flight line will have the safety pull-pin attached to the extinguisher by lanyard.

14.19.2.17.5. (Added) All pintle hooks will have cotter pin installed whether open or closed, and pin will be secured to vehicle or support equipment by a lanyard.

14.19.2.17.6. (Added) . The Crash Recovery response vehicles will have priority for sheltering.

14.19.2.17.7. (Added) UNDER NO CIRCUMSTANCES will vehicles be left running when parked in hangars. Ignition keys will be left in the ignition and the vehicle will be pointed toward the exit. A minimum clearance of 10 feet will be maintained between vehicles and aircraft at all times.

14.19.2.19. Each AMU will equip at least three vehicles with magnetic bars to help reduce metal FO on the airfield. Each AGE team will also equip a vehicle with a magnetic bar. Magnetic bars will hang with 3-5 inches clearance from pavement surface. The Wing FOD Prevention Manager will provide guidance when the magnetic bars will be removed/reinstalled to prevent damage during winter snow season.

14.19.6.2. (Added) Squadron Commanders will:

14.19.6.2.1. (Added) Appoint an alternate to attend the 3 WG FOD Executive Committee meeting if they cannot be present.

14.19.6.2.2. (Added) Appoint a primary and alternate squadron FOD Monitor, by letter, with a copy sent to the 3 Wing FOD Manager for record keeping. These monitors will act as a point of contact for organizational FOD issues, disseminate FOD Program information within their areas of responsibility, and assist the 3 WG FOD Manager, when necessary.

14.19.6.2.3. (Added) Ensure each work center has a FOD prevention bulletin board. Work centers located in close proximity may use the same board, provided it's centrally located. Placement is at the discretion of the individual squadron, but the location must provide the greatest visual access to personnel. The squadrons are responsible for obtaining and maintaining the bulletin board. The space on the bulletin board may be shared provided the following items are displayed:

14.19.6.2.3.1. (Added) Copy of the most recent FOD Prevention Committee Minutes.

14.19.6.2.3.2. (Added) The 3WG VA 90-4, *FOD* DOP Program, point of contact visual aid.

14.19.6.2.3.3. (Added) Most recent quarterly FOD prevention poster.

14.19.6.2.3.4. (Added) Most recent FOD Flash published by the Wing FOD prevention manager.

14.19.6.2.3.5. (Added) Ensure an effective tool control program is established in their squadron and all units performing maintenance on aircraft, hangars, or equipment that operates, or transit the airfield.

14.19.6.2.3.6. (Added) Ensure maximum participation in the FOD prevention awards program and nomination of their personnel to the Wing FOD NCO.

14.19.6.2.3.7. (Added) Ensure all maintenance production areas have approved FOD containers readily accessible to workers.

14.19.6.2.3.8. (Added) Ensure bench stock, bench stock residue, shop stock, and operating stock areas are controlled to reduce the potential for hardware items causing FOD.

14.19.6.2.4. (Added) The 3 AMXS/EMS will:

14.19.6.2.4.1. (Added) When deployed to areas where radiographic facilities are not available, a 9-level supervisor may waive the post maintenance ramp x-rays, provided he/she visually supervises the maintenance action and completes an inspection of the area, prior to panel installation. A 9-level supervisor’s follow-up entry will be made in the affected aircraft’s AFTO Forms 781A.

14.19.6.2.4.2. (Added) Ensure the x-ray film is returned to the NDI lab after a search with accessible FO taped to the film.

14.19.6.2.5. (Added) Any unit requesting contract work approved for airfield maintenance and or service on the airfield will:

14.19.6.2.5.1. (Added) Ensure the Statement of Work includes language pertaining to FOD prevention in accordance with this supplement. The contractor will be required to maintain cleanliness of taxiway, runway, and apron pavements at all times during progression of work in order to alleviate foreign object damage.

14.19.6.2.5.2. (Added) Ensure the Statement of Work includes language that contractors will ensure an effective tool control program is established in accordance with this supplement. The contractors will be required to include details of their tool control program in their Quality Control Plan.

14.19.6.2.5.3. (Added) Contractors will ensure an effective tool control program is established in accordance with this supplement. The contractors will include details on their tool control program in the contractors Quality Control Plan.

14.19.6.2.6. (Added) The MXG QA will:

14.19.6.2.6.1. (Added) Perform semi-annual inspection of the FOD prevention program.

14.19.6.2.6.2. (Added) Provide a copy of all lost tool reports CAF Form 145/dropped object reports to the wing FOD manager's office and 3 MOS/MXOOS.

14.19.6.2.6.3. (Added) Represent the Wing FOD monitor on deployments (on deployments without QA personnel, the deploying AMU will appoint a senior aircraft or engine craftsman as acting FOD monitor, this individual will report to the FOD monitor for a pre-deployment briefing).

14.19.6.2.7. (Added) The 3 CMS will:

14.19.6.2.7.1. (Added) Coordinate and report any suspected FOD discovered during engine maintenance to the Wing FOD NCO.

14.19.6.2.7.2. (Added) Assist the Wing FOD NCO and Wing Safety, as necessary, during investigation of FOD incidents. Perform disassembly of engine modules or components, as required, for FOD investigations. Provide repair cost data to FOD NCO and Wing Safety.

14.19.6.2.8. (Added) The 3 EMS will:

14.19.6.2.8.1. (Added) Perform x-ray inspection of designated areas of the aircraft, in accordance with applicable technical data.

14.19.6.2.8.2. (Added) If FO is noted, separately enter each shot number and quantity of item discovered in the next open blocks of the aircraft AFTO Form 781A/IMIS. Each entry will be a Red X condition.

14.19.6.2.8.3. (Added) Notify the prime shop of the results when the review of the x-ray film is complete and sign off the x-ray inspection Red X.

14.19.6.2.8.4. (Added) Assist the prime shop in pinpointing the location of the FO. The prime shop, with the assistance of the structural repair specialist, if needed, will determine if the FO is in a sealed area.

14.19.6.2.9. (Added) The 673rd Civil Engineering Squadron (673 CES) will:

14.19.6.2.9.1. (Added) Provide powered sweepers for aircraft parking ramps, taxiways, runways, flight line access roads, and other areas of the airfield, as required, to control FOs.

14.19.6.2.9.2. (Added) Provide a magnetic sweeper to reduce metallic FOs on the airfield.

14.19.6.2.9.3. (Added) Monthly serviceability status of sweepers will be provided to the Wing FOD NCO for inclusion in the monthly FOD statistics.

14.19.6.2.9.4. (Added) Provide assistance and technical advice to Wing FOD NCO and Wing FOD Committee on pavement repairs, airfield construction, signs, and lines, and other functions that fall under the control of Civil Engineering.

14.19.6.2.10. (Added) The 3rd Operations Support Squadron (3 OSS) will:

14.19.6.2.10.1. (Added) Provide monthly status of all airfield repair and construction projects affecting aircraft operation areas to Wing FOD NCO for inclusion in monthly FOD statistics.

14.19.6.2.10.2. (Added) Provide a monthly summary of flying hours and landings for all assigned aircraft to Wing FOD NCO for inclusion in monthly FOD statistics.

14.19.6.2.10.3. (Added) Coordinate with Wing FOD NCO and other agencies to close the airfield for semiannual FOD walks and provide personnel to assist in coordination and control of personnel on the airfield during the FOD walk.

14.19.6.3.1. (Added) Objectives:

14.19.6.3.1.1. (Added) . To recognize and reward individuals assigned to JBER for outstanding accomplishments in FOD prevention Program.

14.19.6.3.1.2. (Added) Establish awareness and stimulate individual initiative in the FOD prevention program.

14.19.6.3.2. (Added) Award Categories:

14.19.6.3.2.1. (Added) FOD Fighter of the Quarter.

14.19.6.3.2.2. (Added) Golden Bolt of the Quarter.

14.19.6.3.2.3. (Added) FOD Poster of the Quarter.

14.19.6.3.2.4. (Added) Unit FOD Monitor of the Quarter.

14.19.6.3.3. (Added) Selection Process:

14.19.6.3.3.1. (Added) Squadrons are encouraged to nominate personnel FOD Fighter and FOD Poster submissions to the 3 WG FOD NCO. Awareness programs are most effective when emphasized at unit level.

14.19.6.3.3.2. (Added) The Wing FOD NCO will select the Golden Bolt, FOD Fighter, and the unit FOD monitor Quarterly Award winner. The 3 WG/CV will select the FOD Poster of the Quarter.

14.19.6.3.4. (Added) FOD Fighter of the Quarter:

14.19.6.3.4.1. (Added) Selection will be based on how the actions of the nominee support the fight against FOD.

14.19.6.3.4.2. (Added) Nominations will be submitted in memorandum format (see 3 WG FOD website), with a summary of all recent accomplishments related to FOD prevention/awareness, to reach 3 WG/FOD (Wing FOD NCO) by the last day of each quarter.

14.19.6.3.5. (Added) FOD Poster of the Quarter Contest:

14.19.6.3.5.1. (Added) Personnel may submit a FOD Prevention Poster. FOD prevention posters can be sketched or cut and pasted from a computer. Each poster will be judged for originality, visual impact, and how effectively it portrays a FOD prevention idea.

14.19.6.3.5.2. (Added) Winning poster will be distributed base-wide for display on FOD bulletin boards.

14.19.6.3.5.3. (Added) Entries must be submitted to 3 WG/FOD (Wing FOD NCO) by the last day of each quarter.

14.19.6.3.6. (Added) Golden Bolt Award. Any person finding the "Golden Bolt" receives a 1-day pass and is entered in the quarterly contest. One name will be drawn from all eligible and that person will be the quarterly "Golden Bolt" winner.

14.19.6.3.7. (Added) Unit FOD Monitor of the Quarter Contest:

14.19.6.3.7.1. (Added) Selection will be based on how the actions of the nominee support the FOD program throughout the units, as well as day-to-day performance of their duties as the unit FOD monitor.

14.19.6.3.7.2. (Added) Nominations will be submitted in narrative letterform, with a summary of all recent accomplishments related to FOD prevention within their units. Nominees should be submitted to the 3 WG/FOD (Wing FOD NCO) by the last day of each quarter.

14.19.6.3.8. (Added) Quarterly award winners will receive the following:

14.19.6.3.8.1. (Added) Certificate of congratulations from the Vice Wing Commander.

14.19.6.3.8.2. (Added) Three-day pass (military only), not to include FOD poster award winners.

14.19.6.3.8.3. (Added) Engraved plaque.

14.20.1.1. (Added) The AMU Debrief Section will: Document repeat or recur condition in MIS and on the AFTO Form 781A/IMIS Electronic Forms. Manual forms will be clearly marked in bold red print or stamp to indicate repeat and recur discrepancies. IMIS Electronic Forms will indicate repeat/recur in the discrepancy block.

14.20.1.2. (Added) AMUs will:

14.20.1.2.1. (Added) REPEAT 1. If the repeat discrepancy is a red diagonal, the technician who performed corrective action will sign the "corrected by" block. For all "Repeat 1" discrepancies, a 7-level technician or higher must sign the "inspected by" block of the AFTO Form 781A/IMIS Electronic Forms.

14.20.1.2.2. (Added) REPEAT 2. If the repeat discrepancy is a red diagonal, the technician who performed the maintenance will sign the "corrected by" block. For all "Repeat 2" discrepancies, a MSgt or higher who is on the special certification roster (SCR) to clear repeat/recur discrepancies must sign the "inspected by" block of the AFTO Form 781A/IMIS Electronic Forms.

14.20.1.2.3. (Added) REPEAT 3:

14.20.1.2.3.1. (Added) A third-time repeat (and all sub sequential occurrences) NMC MESL item will result in an automatic impoundment of the aircraft.

14.20.1.2.3.2. (Added) The production supervisor will notify 3 MXG/MXQ of any third-time repeat discrepancies in order to start impoundment procedures.

14.20.1.2.3.3. (Added) If the repeat discrepancy is a red diagonal, the technician who performed the maintenance will sign the "corrected by" block. For all "Repeat 3" discrepancies, the AMU OIC/superintendent who is on the SCR to clear repeat/recur discrepancies must sign the "inspected by" block of the AFTO Form 781A/IMIS Electronic Forms.

14.20.1.2.3.4. (Added) If the recur discrepancy is a red diagonal, the technician who performed the maintenance will sign the "corrected by" block and a 7-level technician or higher who is on the SCR to clear repeat/recur discrepancies will sign the "inspected by" block of the AFTO Form 781A/IMIS Electronic Forms.

14.20.1.3. (Added) Can Not Duplicate (CND) Forms Documentation. Document malfunctions which cannot be duplicated by entering "CND malfunction" in the corrective action block of the AFTO Form 781A/IMIS. List all actions taken during troubleshooting (including TO references) in the corrective action block of the AFTO Form 781A/IMIS. The individual performing or assisting in the malfunction diagnosis or maintenance will sign the corrected by block of the AFTO Form 781A/IMIS. As a minimum, the individual signing the inspected by block of the AFTO Form 781A/IMIS for the "CND" must be a 7-level technician or higher and on the SCR to clear CND discrepancies.

14.20.3. (Added) Aircraft Servicing Documentation:

14.20.3.1. (Added) Each time hydraulic, Polyalphaolefin (PAO), oil, liquid oxygen (LOX) , and nitrogen carts are used for servicing, the servicing cart serial number will be placed in the corrected by block of the AFTO Form 781A/IMIS Electronic Forms.

14.20.3.2. (Added) AGE Flight will develop a local tracking sheet for servicing carts that will include, as a minimum; aircraft tail number, component serviced, date/time, and employee number (this tracking sheet will stay with the servicing cart).

14.20.3.3. (Added) Maintenance personnel will document the tracking sheet after using the servicing cart.

14.20.3.4. (Added) AGE Flight will maintain the completed local tracking sheet for 90 days.

14.22.8. (Added) When aircraft meet hangar queen status, the following apply:

14.22.8.1. (Added) Production superintendent will accomplish a forms review every 7 days to ensure proper forms documentation. Document this inspection by making a dash inspection entry in the first open block on the AFTO Form 781A/IMIS and annotate the inspection accordingly.

14.22.8.2. (Added) MOC will use the 3 WG Aircraft Status and Flying Summary Report to track the number of days since an aircraft has last flown, after 20 days downtime. The days will continue to be tracked until the aircraft has flown. This will allow increased management awareness, even though the aircraft may not officially be in hangar queen status.

14.22.8.3. (Added) QA will:

14.22.8.3.1. (Added) Review aircraft records since the last flight and before the first flight attempt.

14.22.8.3.2. (Added) Perform calendar quality verification inspection (QVI) as required. Perform 30-day calendar QVI after 30 days' downtime. Perform 90-day calendar after 90 days'

downtime. Use TO 00-20-1 for additional inspection requirements for 90-day calendar inspection.

14.22.8.4. (Added) The AMU OIC/Mx superintendent will conduct a recovery plan meeting to determine appropriate actions to make aircraft flight ready for all hangar queen aircraft. The following offices will attend (or as directed by the AMU OIC/Mx superintendent): 3 MOS/ MXOOS, Production, Supply Section Chief, QA, and appropriate section chiefs. The following items should be discussed: Determine and coordinate necessary support from other base/higher headquarters agencies. Consider supply assistance/mission impact letters. This should be a continual process until the aircraft is removed from hangar queen status.

14.23.8.1. (Added) F-22. Hot pit refueling will be performed in accordance with LCL-3WG/T.O.D. F702727144 A qualified weapons technician will safe "Hot" Gun in accordance with T.O.D. task F757562144, 3WGI 13-203, prior to cursory inspection.

14.23.10.2.1. (Added) Refueling supervisor (A position) must be a hot refueling task-qualified 5-level that is marshaling and refuel supervisor qualified.

14.23.12.1. QA is the overall administrator of the wing hot refueling program. QA will designate a hot refuel-qualified inspector to monitor the hot refueling program. The 3 MOS MTF (MXOT) will conduct Phase I and II hot refueling training for all maintenance personnel hot refueling 3 WG aircraft. This training will be documented in the appropriate MIS. MXOT will annotate the date entered training block with the class graduation date and initial the trainer block of the career field education and training plan (CFETP) or AF Form 797, *Job Qualification Standard Continuation*.

14.23.12.2.2. Phase 3 is the responsibility of each AMU. After phase 1 and 2 are complete, initial certification will be performed by a squadron certifier and require the completion of two hot refuels, with the first one as an over-the-shoulder hands-on and the second with no assistance. **UNDER UNUSUAL CIRCUMSTANCES**, a QA certifier may perform certification in place of an AMU certifier. **NOTE:** Notify QA one day in advance of scheduled event to allow time to verify completing of prerequisite training.

14.23.12.2.2.1. (Added) There will be a maximum of one individual being initially certified on any pit.

14.23.12.2.3. (Added) Prior to initial AMU certifier certification, the individual will be required to be a qualified Hot Pit Pad super on JBER for a minimum of 180 days.

14.23.13.1. The pad supervisor will complete an AF Form 2426, *Training Request and Completion Notification*, which contains a minimum of each individual's name, rank, employee number, and AMU, and deliver it to QA and the UTM at the end of each day of hot pit operations.

14.23.13.1.1. (Added) Squadron UTM's are responsible for updating the MIS on hot pit members to maintain currency. This does not include initial certifications.

14.23.15.1. (Added) Individuals violating safety, TOs, or failing to maintain proficiency will be de-certified.

14.23.15.1.1. (Added) Once de-certified, the individual's supervisor will coordinate with the hot refueling instructors/certifiers to ensure maintenance training and QA are available for individual's re-certification.

14.23.15.1.2. (Added) Annual Evaluation:

14.23.15.1.2.1. (Added) AMU certifiers will perform an annual evaluation on all hot pit members to insure proficiency on hot pit procedures. Maintenance certifiers will be required to maintain currency as hot pit pad super to perform as an evaluator.

14.23.15.1.2.2. (Added) Annual evaluation will be received before or during the month due, if not, the individual will become unqualified until an evaluation is completed.

14.23.15.1.2.3. (Added) During the evaluation if the individual violates safety or technical data at anytime, they will be de-certified.

14.28.1. The 3 MXG Wing Avionics Manager will be the designated radar warning receiver (RWR)/radar threat warning (RTHW) manager.

14.28.1.3. AMUs will immediately notify 3 MOS/MXOP of test equipment failures. Test results will be entered and tracked per aircraft in the appropriate MIS.

14.30.5. (Added) Red Ball Maintenance Procedures:

14.30.5.1. (Added) Production superintendent will:

14.30.5.1.1. (Added) Notify MOC of any Red Ball maintenance discrepancies.

14.30.5.1.2. (Added) Obtain a valid JCN/LCN for Red Ball discrepancies. In the event the MIS is unavailable, a manual job number may be used but must be documented in the MIS when the system becomes available again.

14.30.5.1.3. (Added) Ensure Red Ball Checklists are readily available and aircraft AFTO 781A/IMIS are documented in accordance with TO 00-20-1 for all maintenance performed.

14.30.5.1.4. (Added) Ensure all "Red X" discrepancies are cleared in the AFTO 781A/IMIS and in the appropriate MIS prior to flight.

14.30.5.1.5. (Added) Ensure appropriate automated data collection system (MIS, computer fault reporting system (CFRS)) entries are made.

14.30.5.1.6. (Added) Ensure any follow-on action related to operational checks is accomplished prior to the aircraft flying its sortie. Pilot and aircrew members may perform the operational checks.

14.34.4. 5-skill level personnel will complete and pass the practical and aircraft forms documentation exam administered by 3 MXG/QA prior to the CAF IMT 64 being routed to 3 MXG/CC for waiver approval on special certification roster (SCR) tasks.

14.37.1. The 3 MXG Wing Avionics Manager will function as the interrogation friend or foe (IFF) manager. Units will perform IFF mode IV checks on all missions departing Continental United States (CONUS) to overseas locations and all missions flying outside US airspace and returning to CONUS (missions that originate in Alaska, Hawaii, or US Territories and do not depart US controlled airspace are viewed as if they are missions remaining in CONUS).

14.37.1.4. IFF Mode IV maintenance operational checks not accomplished due to lack of maintenance test equipment will be written up in the aircraft forms on a Red Dash. The Mode IV ground operational check will be accomplished at the next overseas locations where test

assets are available and mission turn-time provides maintenance the opportunity to perform the check.

14.37.2. (Added) Test results will be entered and tracked per aircraft in the appropriate MIS (IMDS, IMIS, and so forth).

14.37.2.1. (Added) All testing data and results will be maintained for a minimum of 1 year.

14.37.2.2. (Added) The 3 MOS/MXOP will print the appropriate MIS data by the 5th of the current month of the identify friend or foe (IFF) test results from the previous month.

14.37.2.3. (Added) For all exercises and aircraft traveling through non-US controlled airspace, the test results will be recorded on Ground Check Documentation Worksheet (located on QA web page) and forwarded to 3 MOS/MXOP.

14.37.2.4. (Added) E-3 aircraft front to back Mode IV testing is adequate for preflight when the back end crew is present. Local flights performed without back end crew must perform external preflight Mode IV tests prior to sortie.

14.37.2.5. (Added) Testing of aircraft when initially going on alert status satisfies preflight program requirements. This eliminates unnecessary delay of aircraft launch.

14.38. (Added) Total oil serviced will be tracked for the E-3B using the AFTO Form 781, F-22 will be tracked with the Aircraft Status Board in IMIS.

14.38.1. (Added) AMU's will submit weekly oil samples to the oil analysis program (OAP) lab for all oil carts assigned (except 517 AMU).

14.38.1.1. (Added) Assigned oil carts sampled will be delivered to the OAP lab no later than 1600 the first duty day of each week. DD Form 2026, *Oil Analysis Request*, will accompany every oil cart sample submitted to the OAP lab. The date oil samples are taken and when the sampling is due will be documented on the AFTO Form 244.

14.38.1.2. (Added) Oil carts samples not received by OAP lab by the prescribed time, the applicable cart will be placed on a code "P – Do not use, submit sample."

14.38.1.3. (Added) Aerospace ground equipment (AGE) will submit an oil sample to the OAP lab for all oil carts they service before releasing the carts back to the unit.

14.38.1.4. (Added) Aircraft oils in bulk containers (55 gallon drums or other) that are to be transferred to oil carts for the servicing of aircraft engines will be sampled at initial opening and results known prior to the addition to the oil cart.

14.38.2. (Added) Ensure a OAP sample receipt log is maintained and includes: aircraft tail number, time sample taken, time sample delivered, time MOC notified of OAP status, and the name of the individual notified.

14.39. (Added) The building custodian will develop and update a hands-on hangar door training plan for each specific type of aircraft hangar door. This plan will include as a minimum: hangar door hazards, emergency procedures, hangar door operations, and cold weather hangar door operating instructions. The military training flight (MTF) can provide guidance on developing the training plan.

14.39.1. (Added) MTF will develop and update a hangar door awareness training plan and provide awareness training for personnel who work in hangars but do not need to operate

electronic or manual hangar doors. This training will include hangar door hazards, emergency procedures and cold weather hangar door operating instructions.

14.39.2. (Added) The 773 CES/CEOSB will:

14.39.2.1. (Added) Ensure the contractor will perform preventative maintenance annually on all hangar doors. Inspections will include detailed visual examination of the operators and related mounting structure and hardware with the door fully closed, fully open, and during the operation of raising and lowering the door. The contractor will perform inspections using the appropriate checklist for those doors.

14.39.2.2. (Added) Facility managers will contact 773 CES/ CEOSB for any problems that occur with the operation of the hangar doors or parts needing repair and/or replacement. The 773 CES/CEOSB will contact the hangar door contractor with the information; the contractor's response time is continuous, 24 hours a day, 7 days a week. After duty service calls will be placed with the 673 CES/CEF who will contact the quality assurance personnel for the contractor to respond.

14.39.3. (Added) Units must ensure continued operation of hangar doors, precautions must be taken during winter operations. Water and fire suppression pipes are at risk of freezing if the door remains open for an extended amount of time.

14.39.3.1. (Added) When the temperature falls below 33 degrees Fahrenheit, hangar doors must remain closed, unless aircraft or other equipment is being moved in or out of the hangar. When the temperatures go below zero, pipes begin to freeze almost immediately after doors open. Personnel who operate doors must remain alert to ensure hangar doors remain open only long enough to move aircraft or equipment.

14.40. (Added) Aircraft Wash Rack Procedures:

14.40.1. (Added) Units must follow specific guidance for the following temperatures:

14.40.1.1. (Added) When outside temperatures fall below 33 degrees Fahrenheit, aircraft which have been parked outside will be positioned on the wash rack at least 4 hours prior to the scheduled wash time in order to allow temperature stabilization.

14.40.1.2. (Added) When outside temperatures are below 33 degrees Fahrenheit, aircraft will remain inside a minimum of 6 hours to allow for drying.

14.40.1.3. (Added) Ensure aircraft is dry prior to towing aircraft from the hangar. The AMU OIC/Mx Superintendent can waiver this requirement but must take appropriate action to dry aircraft brakes prior to towing aircraft to another hangar. Aircraft will not remain outside until completely dry.

14.40.2. (Added) AMU's will (N/A if under wash contract):

14.40.2.1. (Added) Appoint a wash rack supervisor.

14.40.2.1.1. (Added) Wash supervisor and AMU supervision are responsible for supervision of the wash rack, training of wash personnel, and ensuring the wash rack safety briefing is accomplished (see **Attachment 13**).

14.40.2.2. (Added) Provide and store authorized and approved QPL listed materials needed for cleaning aircraft listed in TO 1-1-691, *Aircraft Weapons Systems Cleaning and Corrosion Control*.

14.40.2.3. (Added) . Clean wash rack and equipment after each aircraft wash, inventory, and properly store all wash rack equipment.

14.40.2.4. (Added) . Ensure a qualified 7-level or higher supervisor accomplishes an after-wash inspection. The wash supervisor or representative will then notify the production supervisor and MOC of wash completion. MOC will notify QA and Corrosion Control (after wash aircraft paint score) for as applicable.

14.40.3. (Added) . Additional guidance on C-17 contracted wash requirements are outlined in the Performance Work Statement.

18.20. Prescribed Forms No forms were prescribed by this publication.

18.21. Adopted Forms :

AF Form 483, *Certificate of Competency*

AF Form 797, *Job Qualification Standard Continuation*

AF Form 1297, *Temporary Issue Receipt*

AF Form 1492, *Warning Tag*

AF Form 2005, *Issue/Turn-In Request*

AF Form 2410, *Inspection/TCTO Planning Checklist*

AF Form 2426, *Training Request and Completion Notification*

AF Form 2432, *Key Issue Log*

AF Form 2434, *Munitions Configuration and Expenditure Document*

AFTO Form 95, *Significant Historical Data*

AFTO Form 244 *Industrial/Support Equipment Record*

AFTO Form 349, *Maintenance Data Collection Record*

AFTO Form 350, *Reparable Item Processing Tag*

AFTO Form 781, *Aviation Resource Management Systems (ARMS) Aircrew/Mission*

AFTO Form 781A, Maintenance Discrepancy and Work Document

DD Form 365-1, *Weight Checklist Record, "Chart A" – Basic*

DD Form 365-4, *Weight and Balance Clearance Form F - Transport/Tactical*

DD Form 2026, *Oil Analysis Request*

DD Form 2861, *Cross Reference*.

CAF Form 140, *CTK Inventory and Control Log*

CAF Form 145, *Lost Tool/Object Worksheet*

3 MXG Form 146, *Missing/Removed Tool Log*

JOHN K. MCMULLEN, Colonel USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

3WGI 21-132, *Crash Recovery/Hot Brake Procedures*, 11 Apr 2008.

3 WG OPLAN 91-1, *Investigation & Reporting Plan for Flight, Ground and Weapons Mishaps*, Aug 08.

3WG MOI 21-170, *Aircraft Structural Integrity Program*, 14 Jul 2008.

AFOSHSTD 91-110, *Nondestructive Inspection and Oil Analysis Program,* 01 Jul 1997.

AFI 91-204, *Safety Investigations and Reports,* 24 Sep 2008.

AFMAN 91-201, *Explosives Safety Standards*, 17 Nov 2008.

AFMAN 10-206 IC1, *Operational Reporting,* 18 Jun 2010.

PACAFI 21-105, *Air and Space Equipment Structural Maintenance*, 26 Nov 2003.

TO 00-20-1, *Aerospace Equipment Maintenance General Policy and Procedures,* 1 Sep 06.

TO 00-20-2, *Maintenance Data Documentation,* 15 Nov 09.

TO 00-25-107, *Maintenance Assistance,* 15 July 09.

TO 1-1-300, *Acceptance/Functional Check Flight and Maintenance OPR Checks*, 14 Nov 07.

TO 1-1-691, *Aircraft Weapons Systems Cleaning and Corrosion Control,* 19 Oct 07.

Abbreviations and Acronyms

A/C— Aircraft.

ADCC— Assistant Dedicated Crew Chief.

ADR— Aircraft Document Reviews.

AFI— Air Force Instruction.

AFETS—Air Force Engineering and Technical Service.

AFSC— Air Force Specialty Code.

AFTO— Air Force Technical Order.

AGE— Aerospace Ground Equipment.

AME— Aircraft Maintenance Equipment.

AMU— Aircraft Maintenance Unit.

AMXS— Aircraft Maintenance Squadron.

APU— Auxiliary Power Unit.

AR— Assistance Request.

ASIP— Aircraft Structural Integrity Program.

ASM— Aircraft Structural Maintenance.

CAC— Combat Alert Cell.

CAF— Combat Air Forces.

CANN— Cannibalization.

CAT— Category.

CCH— Corrosion Control Hangar.

CDB— Central Database.

CDDAR— Crashed, Damaged, or Disabled Aircraft Recovery.

CEMS— Comprehensive Engine Management System.

CFETP— Career Field Education and Training Plan.

CFRS— Computer Fault Reporting System.

CG— Center of Gravity.

CMS— Composite Maintenance Squadron.

CND— Can Not Duplicate.

CONUS— Continental United States.

COSO— Combat Oriented Support Organization.

CTK— Composite Tool Kit.

DBM— Database Manager.

DCC— Dedicated Crew Chief.

DECC— Defense Enterprise Computer Center.

DEROS— Date Estimated to Return from Overseas.

DIFM— Due In From Maintenance.

DIT— Data Integrity Program.

DOP— Dropped Object Program.

DR— Deficiency Report.

DSV— Detected Safety Violation.

EAC— Emergency Action Checklist.

EED -*Electro****—Explosive Devices.***

EID— Equipment Identification Designator.

EM— Engine Management.

EMS— Equipment Maintenance Squadron.

EOD— Explosives Ordinance Disposal.

EOR— End of Runway.

ETAR— Engineering Technical Assistance Request.

FCF— Functional Check Flight.

FIN— Field Information Network.

FO— Foreign Object.

FOD— Foreign Object Damage.

FOM— Facilitate Other Maintenance.

FTP— File Transfer Protocol.

HAZMAT— Hazardous Material.

HMAL— How Malfunction.

IFF— Identify Friend or Foe.

IMDS— Integrated Maintenance Data System

IMIS— Integrated Maintenance Information System

IO— Investigating Officer.

IPL— Immediately Prior to Launch.

JBER— Joint Base Elmendorf-Richardson.

JCN— Job Control Number.

JEIM— Jet Engine Intermediate Maintenance.

JML— Job Standard Master Listing.

JST— Job Standard.

KCAS— Knots Calibrated Air Speed.

LALS— Linkless Ammunition Loading System.

LCN— Logistics Control Number.

LDT— Locally Developed Tool.

LMR— Land Mobile Radio.

LO— Low Observable.

LOX— Liquid Oxygen.

LRU— Line Replaceable Unit.

LSC— Load Standardization Crew.

MAF— Mobility Air Force.

MASO— Munitions Accountable System Officer.

MDS— Mission Design Series.

MDSA— Maintenance Data Systems Analysis.

MESL— Minimum Essential Subsystems List.

MICAP— Mission Capable.

MIL— Master Inventory List.

MIS— Maintenance Information System.

MOC— Maintenance Operations Control.

MOF— Maintenance Operations Flight.

MOS— Maintenance Operations Squadron.

MSAT— Maintenance Scheduling Application Tool.

MTF— Military Training Flight.

Mx— Maintenance.

MXG— Maintenance Group.

NCO— Noncommissioned Officer.

NDI— Non-Destructive Inspection.

NMC— Not Mission Capable.

NSN— National Stock Number.

OAP— Oil Analysis Program.

OCF— Operational Check Flight.

OIC— Officer In Charge.

OPR— Office of Primary Responsibility.

ORG— Organization.

PAO— Polyalphaolefin.

PAU— Pyrotechnic Arming Units.

PIM— Product Improvement Manager.

PM— Program Manager.

PMEL— Precision Measurement Equipment Laboratory.

POC— Point of Contact.

PoMX— Point Of Maintenance.

PPI— Possession Purpose Identifier.

PQDR— Product Quality Deficiency Report.

PS&D— Plans, Scheduling, and Documentation.

QA— Quality Assurance.

QAR— Quality Assurance Representative.

QPL— Qualified Product List.

QVI— Quality Verification Inspection.

R&R— Repair and Reclamation.

REDI— Request for Engineering Disposition Instructions.

RTHW— Radar Threat Warning.

RWR— Radar Warning Receiver.

SCR— Special Certification Roster.

SE— Support Equipment.

SNCO— Senior Noncommissioned Officer.

SSN— Social Security Number.

SPRAM— Special Purpose Recoverables Authorized Maintenance.

SOF— Supervisor of Flying.

TAR— Technical Assistance Request.

TCI— Time Change Item.

TCTO— Time Compliance Technical Order.

TDV— Technical Data Violation.

TDY— Temporary Duty.

TE— Technical Equipment.

TMDE— Test Measurement and Diagnostic Equipment.

TO— Technical Order.

TOD— Tech Order Data.

TRIC— Transaction Identification Code.

UALS— Universal Ammunition Loading System.

UMD— Unit Manning Document.

UTM— Unit training Manager.

W&B— Weight and Balance.

WCE— Work Center Event.

WS— Weapons Standardization.

WWID— World Wide Identification Number.

WWM— Wing Weapons Manager.

Attachment 2

AMMUNITION CLEARING

A2.1. The following procedures will be used to develop a local checklist to ensure all agencies are contacted, personnel limitations are met, and safety briefings accomplished. These are only the minimums. All possible authorized procedures must be exhausted to remove live ammunition from systems/components by qualified weapons, munitions flight personnel, or explosives ordinance disposal (EOD) before being received into the Armament Flight. Components containing live ammunition will be delivered to the north end of Building 17720 with the barrels facing east. The senior fully qualified 20mm gun system clearing person is in charge of this operation and responsible for compliance with all procedures in this instruction and all other applicable Air Force Safety and Security Instructions.

A2.1.1. Location of Operation: If a gun or any part of the gun system containing ammunition is removed from the aircraft, clearing of gun systems and Universal Ammunition Loading System/ Linkless Ammunition Loading System (UALS/LALS) containing live ammunition is strictly limited to Building 17720, north end of the warehouse with the barrels facing east. Talley Avenue will be closed from the south end of Building 16718 to the south entrance to the munitions control parking area.

A2.1.2. Personnel must annotate DATE, AND TIME AMMO ENTERED SHOP.

A2.1.3. Personnel must log the following information:

A2.1.3.1. EQUIPMENT.

A2.1.3.1.1. AIRCRAFT Tail Number.

A2.1.3.1.2. GUN Serial Number.

A2.1.3.1.3. DRUM/CONTAINER Serial Number.

A2.1.3.1.4. UALS/LALS Serial Number.

A2.1.3.2. PERSONNEL.

A2.1.3.2.1. CREW CHIEF.

A2.1.3.2.2. CREW MBRS.

A2.1.3.2.3. CASUALS (that is, QA / SAFETY).

A2.1.3.3. TYPE AMMO INVOLVED.

A2.1.4. Personnel must notify the following organizations, annotate the time, and name of person contacted:

A2.1.4.1. MOC: 552-4816.

A2.1.4.2. FIRE DEPT: 552-2801.

A2.1.4.3. MUNS CONT: 552-3306.

A2.1.4.4. QA: 552-7634/0570.

A2.1.5. EMERGENCY PROCEDURES.

A2.1.5.1. The senior person involved in the clearing operation is responsible for all notification and documentation procedures. If a fire is encountered, immediately cease operations, notify MOC @ 552-4816/9321 or by radio if at a safe distance, fight fire, and remove munitions if possible. Evacuate all nonessential personnel a minimum of 2,500 feet for high explosive incendiary (HEI) and 300 feet for target practice (TP).

A2.1.5.2. Armament Flight personnel will disassemble gun system or UALS/LALS components as far as necessary to safely remove all live ammunition, in accordance with applicable technical data. If a round or rounds are found to be jammed or stuck in the barrel itself, the barrel will be removed from the gun and given to EOD for disposition. Non-EOD personnel will not attempt to remove any live ammunition that is jammed in a gun barrel under any circumstances.

A2.1.5.3. All personnel involved or observing operations will be briefed on the following: Explosive limits for this operation at the site, required safety equipment: grounding/bonding straps.

A2.1.6. Crew chief will notify control of a mishap/accident/fire and record the time flames envelope munitions.

A2.1.7. Crew members will fight fire and remove munitions if possible. Once the fire envelopes munitions the fire will not be fought unless a rescue attempt is in progress. Evacuate all nonessential personnel to 2,500 feet for HEI and 300 feet for TP.

A2.1.8. On-scene commander will ensure evacuation of all nonessential personnel and direct emergency response personnel to the scene.

A2.1.9. Additional guidance:

A2.1.9.1. Personnel Limits. The maximum number of personnel authorized for any clearing operation will not exceed five. Personnel and casual limits must be clearly monitored and posted at each explosive operation location. Personnel limits are only applicable when explosives are present in the operating area.

A2.1.9.2. Clearing operation will be performed by at least two qualified individuals under the direct supervision of a qualified seven level. Total personnel authorized in the explosive clearing operation, including casuals, is five.

A2.1.9.3. Ammunition will not be kept in the armament flight for more than 24 hours under any circumstances.

A2.1.9.4. Personnel not involved in the operations are prohibited from visiting. This does not include official visits by Safety, quality assurance (QA), or management, provided personnel limits are not exceeded.

A2.1.9.5. Safety: Compliance with all safety procedures from applicable technical data and regulations is mandatory. If a conflict exists between the technical data and regulations, the technical data will take precedence.

A2.1.9.5.1. Tasks not necessary to the clearing operation are prohibited within the immediate vicinity of the hazard.

A2.1.9.5.2. A minimum of two fire extinguishers suitable for the hazards involved will be available for immediate use.

A2.1.9.5.3. Gun system and UALS/LALS components containing live ammunition will be grounded at all times during the clearing operation.

A2.1.9.5.4. Personnel will ground themselves before handling live ammunition and at frequent intervals during the clearing operation.

A2.1.9.5.5. Garments will not be put on or removed while engaged in explosives operations. If garments must be put on or removed, personnel will do so only after leaving the clearing operation and grounding themselves prior to returning.

A2.1.9.5.6. Personnel will ensure components containing live ammunition are handled in accordance with AFMAN 91-201. Striking of live ammunition is strictly prohibited.

A2.1.9.5.7. Personnel engaged in clearing operations will remove all rings, watches, and jewelry before beginning task.

A2.1.9.5.8. In the event of ruptured round or exposed propellant, operations will cease until the round and/or propellant are stored in a safe container. This container should have enough water to cover the round and propellant, it should be marked "Scrap Explosives." Dispose of spilled propellant in accordance with TO 11A-1-42 and 11A-1-60.

A2.1.10. Ammunition will be identified by aircraft tail number and/or the UALS/LALS serial number it was removed from. This documentation will be completed on AFTO Form 350 tag. One tag per container should be filled out and placed with the applicable containers.

A2.1.11. Notify Munitions Control for ammunition containers if needed. While attempting to remove live ammunition from a gun system.

A2.1.12. Armament Flight personnel will coordinate pickup of live ammunition through maintenance operations control (MOC) or Munitions Control immediately upon completion of the operation. Ammunition will not be kept in the Armament Flight for more than 24 hours.

A2.1.13. Jammed guns brought to the Armament Flight will have the barrels pointed to the east, towards the railroad track embankment. This is the area of least hazard in the event of a discharge.

A2.1.14. Upon completion of the clearing operation, and after the ammunition has been removed from the building, notify MOC, Fire Department, Munitions Control, and QA.

Attachment 3

SAMPLE MIS CONTROLLED TRIC ACCESS LETTER

Figure A3.1. Sample MIS Controlled TRIC Access Letter

MEMORANDUM FOR 3 MOS/MXOOA

FROM: 3 MOS/MXOOS

SUBJECT: MIS Restricted TRIC Authorization

1. The following individuals require access to the following restricted TRICs for the performance of their official duties:

Name	**Emp. #**	**User-ID**
Melissa A. Doe	9999A	EFXXXX
Aimee P. Doe	9999B	EFXXXX
Dillon M. Doe	9999C	EFXXXX
Jessica V. Doe	9999D	EFXXXX

2. Required TRIC code: CME3.

Questions should be directed to John M. Doe, 552-1111.

JOHN M. DOE, MSgt, USAF
3 MOS

Attachment 4

MIS SUBSYSTEM MANAGERS

Table A4.1. MIS Subsystem Managers.

OPR	Subsystem
3 MOS/MXOOS	Operational Events
	Aircraft Equipment Inspection and Time Change
	Aircraft Equipment TCTO
	Aircraft Equipment Transfer
	Generic Configuration Status and Accounting Subsystem (GCSAS)
	Aircraft Equipment Inventory Changes
3 MOS/MXOOE	Engine Equipment Inspection and Time Change
	Engine Equipment TCTO
	Engine Equipment Transfer
	Engine Equipment Status and Inventory Reporting
	3 WG/CPM Aircraft Location
	Aircraft Status Reporting
3 CMS/MXMV	Automatic Test Reporting System (ATERS)
3 CMS/MXMC	EGRESS Configuration Management
3 MOS/MXOT	Training Subsystem
3 OSS/OST	Personnel Subsystem
3 MXG/MXQ	Product Quality Deficiency Reporting (PQDR)
3 MOS/MXOOL	Maintenance-Supply Interface
3 AMXS/525 AMU 3 AMXS/90 AMU 703 AMXS/517 AMU 703 AMXS/962 AMU	Automated Debriefing
3 CS/SCMYJ	C-E Equipment Status and Inventory Reporting
3 MOS/MXOOA	Database Management
	Job Data Documentation

Attachment 5

FCF AIRCREW MEMBER CERTIFICATION LETTER

Figure A5.1. FCF Aircrew Member Certification Letter

MEMORANDUM FOR 3 OG/CC

FROM: XX /CC

SUBJECT: FCF Aircrew Member Certification

1. The following individual has completed all FCF training requirements:

NAME/RANK: TOTAL/PAA HOURS:

AIRCREW POSITION: DATE TRNG COMPLETED:

DEROS: DUTY PHONE:

2. Name / Rank has met the requirements of TO 1-1-300 and AFI 21-101 and applicable CAF, MAF and 3WG supplements. Request 3 OG/CC approve certification as a 3rd Wing FCF aircrew member.

NAME, Lt Col, USAF
Commander

Attachments:

FCF Upgrade Program

1st Ind,3 OG/CC

MEMORANDUM FOR XX / CC

Approve / Disapprove

Name, Col, USAF
Commander

DISTRIBUTION:
3 OG/OGV
3 MXG/MXQ (File)
XX /CC

Attachment 6

FUNCTIONAL CHECK FLIGHT UPGRADE PROGRAM LETTER

Figure A6.1. Functional Check Flight Upgrade Program Letter.

Date

MEMORANDUM FOR RECORD

FROM: XX/CC

SUBJECT: Functional Check Flight Upgrade Program

Rank and Name is entered into the FCF Upgrade Training Program and will complete the following program in accordance with AFI 21-101/3WG Sup.

Pre-requisites:	**Date**	**Instructor**
Review of FCF Pubs to include CAF, MAF and local sups	_____	
AFI 21-101: paragraphs 8.16 thru 8.18, (C-12 only, 18.12.)		
including CAF or MAF Sup (as applicable) and 3 WG Sup		
TO 1-1-300		
TO 00-20-1: paragraphs 5.4, 9.2.1, and 9.4.2		
MDS specific -6-1: FCF portion only		
MDS specific -6CF-1		
MDS specific -6CL-1		
Chief FCF Officer Briefing (552-4641)	_____	_____
FCF Profile Briefing (by squadron FCF Program Manager)	_____	_____
FCF Test (Min score of 85%, test at 3OG/OGV)	_____	Score: _____
FCF SIM (FCF Aircrew on console)	_____	_____

Sorties: (N/A for C-17)

FCF Flight	_____	_____

2nd FCF Flight (If required) _____ _____

NOTE: All pre-requisites must be accomplished prior to the flight except for C-17s where the simulator will be the last event in the FCF upgrade program

NAME, Lt Col, USAF

Commander

Attachment 7

FCF/OCF DECISION MATRIX

Table A7.1. FCF/OCF Decision Matrix.

	Functional Check Flight	**Operational Check Flight**
In General	1. Major maintenance 2. Ensure airworthiness	3. Lack confidence in mission capability
When required	1. OG, MXG or Sq CC's discretion 2. When stated in -6 TO 3. OG/CC or MXG/CC will review all aircraft not flown for ≥ 60 days and direct OCF or FCF based upon the circumstances. Either commander may direct an FCF.	4. Sq CC's discretion 5. Can't check system on ground 6. In-flight operational check required by Dash 1 and Dash 2 tech data 7. Hasn't flown in ≥ 30 days 8. When required by FARs (C-12 only)
Approval Authority	1. 3 OG or MXG CC	2. Sq CC or AMU OIC
Flight Crew required	1. FCF current, qualified, trained and approved IAW applicable instructions	2. Sq CC decision IAW para. 8.17.2.1
Flight procedures	1. Dash 6 (TO -6CF-1)	2. Dash 1
FCF in Conjunction with:		
Ferry flight	• No, except with 3 WG/CC waiver IAW TO 1-1-300	• No restrictions
Mission or training flight	• No, except with 3 WG/CC waiver IAW TO 1-1-300	• No, except with 3 OG/CC approval
Initial Checkout Sortie (N/A for C-12s)	1. No, except with 3 WG/CC waiver IAW TO 1-1-300	2. N/A
QA Involvement	1. MX inspection, forms review, and crew brief and debrief	2. MX inspection (if down > 30 days), forms review, crew brief and debrief
Aircraft Configuration	1. Standard FCF configuration	2. As determined by Sq CC
WX Criteria	1. 3000/3 ± 1 hour airworthiness verified before IMC; checks in VMC	2. IAW AFI 11-202 Vol 3; checks in VMC
Minimum WX (Waiverable by 3 OG/CC)	1. 1500/3 ± 1 hour airworthiness verified before IMC; checks in VMC	2. IAW AFI 11-202 Vol 3; checks in VMC

Attachment 8

3RD MAINTENANCE GROUP SQUADRON EID CONTROL NUMBERS

A8.1. Each unit has been assigned a prefix for the nine-digit TC-MAX identifier, and each prefix beginning with EL is listed below. (Fab Flight, Avionics Flight, Munitions Flight and the 19th and 517th Life Support will be identified by first five characters).

Table A8.1. 3rd Aircraft Maintenance Squadron

525 AMU	EL25
90 AMU	EL90, All suffixes after the prefix 9-
F-22 ALERT	ELAA, EA-1 thru -25, E-500 thru -699

Table A8.2. 703rd Aircraft Maintenance Squadron

517 AMU	EL17, (all suffixes)
962 AMU	EL62, FL001-FL999, FLQA1, MO001-MO999
Mobility Equipment	OO001-OO999
Test Equipment	TO001-TO999
Tech Data	01XXX, 02XXX, LPXXX, HZXXX, and 20XXX

Table A8.3. 3rd Component Maintenance Squadron

AVIONICS FLIGHT	C1 thru 29, AVS 1 thru 10
AIS	ELCVA
Lantirn	ELCVS
C-17	ELCVC
ACCESSORY FLIGHT	C50 thru 100, CF1 thru 120, CE50 thru 100
Elec/Enviro	ELCE
Fuel Shop (Fighters)	ELCF
Fuel Shop (Heavys)	ELCFE
Egress Shop	ELCG
Pneudraulics	ELCH
PROPULSION FLIGHT	ELCP, All Suffixes
Propulsion Flt (Pratt & Whitney)	ELPW
TMDE	ELCD, C30 thru 45, CL1 thru 15, CA1 thru 20

Table A8.4. 3rd Equipment Maintenance Squadron

AGE FLIGHT	ELEA
ARMAMENT FLIGH T	ELER
FABRICATION FLIGHT	
Main	ELEFS
F-22/LO	ELEFL
NDI	ELEFN
North Shop	ELEFH
Metals Tech	ELEFM
MAINTENANCE FLIGHT	
C-17 A/R	ELEI
R&R/Wheel & Tire	ELEM, LC-1 thru -10
Trans Alert	ELET
Crash and Recovery	ELEP, E350 thru 399
MUNITIONS FLIGHT	
PGM	ELEW0
TM	ELEW1
CONV	ELEW2
Line D	ELEW3
INSP	ELEW4
STOR	ELEW5
MOBILITY	ELEW6

Table A8.5. 3rd Maintenance Operations Squadron

AFREP	ELAF
QUALITY ASSURANCE	ELQA
MTF	ELMX, SMAT1 thru 4
WSS	ELWS, ALSC-1 thru ALSC-10

Table A8.6. 3rd Operations Group

AIRCREW FLIGHT EQUIPMENT	ELFE

Table A8.7. 353rd Combat Training Squadron/Det 1

353 CTS/MA	EL53

Table A8.8. 372nd Training Squadron/Det 14

FIELD TRAINING DETACHMENT	ELTD

Table A8.9. Additional

732 AMS	ELAS

Table A8.10. AK Air National Guard.

206 CBCS	EL2

Attachment 9

JAM/RUNAWAY GUN

A9.1. The following procedures will be used to develop a local checklist to ensure all agencies are contacted, personnel limitations are met, and safety briefings accomplished. These are only the minimums.

A9.1.1. MOC will document:

A9.1.1.1. Date/Time Initiated.

A9.1.1.2. Type Aircraft.

A9.1.1.3. Call Sign.

A9.1.1.4. Tail Number.

A9.1.1.5. Location.

A9.1.1.6. Type Ammo.

A9.2. MOC will transmit the following across all nets:

A9.2.1. "ATTENTION ALL RADIOS THIS NET, ATTENTION ALL RADIOS THIS NET; THIS IS THE MOC WITH NOTIFICATION OF A GROUND / IN-FLIGHT EMERGENCY. WE HAVE A JAMMED / RUNAWAY GUN.

TYPE ACFT_____TAIL#_____LOCATION_____

REPEAT ONCE ALL RADIOS RESPOND WITH CALL SIGNS, MOC OUT."

A9.3. MOC will notify:

A9.3.1. Emergency Notifications (Complete FIRST!).

A9.3.1.1. Fire Dept – Hotline/2801.

A9.3.1.2. Base Ops – Hotline/2107.

A9.3.1.3. Security Police – Hotline/3105.

A9.3.1.4. Command Post – Hotline/3000.

A9.3.1.5. SOF – Hotline/3628.

A9.3.1.6. MXG CC – Hotline/3005.

A9.3.2. Armament Shop (F-22/1328).

A9.3.3. Transient Alert (TA) – Hotline/4511.

A9.3.4. R&R – Hotline/2017.

A9.3.5. EOD – 3217/8555.

A9.3.6. Weapons Manager/Weapons Standardization 1055 / 1333.

A9.3.7. CMS Super – 0067.

A9.3.8. Wing Safety – 4128 (After hours use Wing Safety Duty Roster. Start with cell phone 227 8246).

A9.3.9. EMS Super – 0059.

A9.3.10. If RED FLAG ALASKA is active: RED FLAG AK MOC–Hotline/4564.

A9.3.11. POL – Hotline/4613.

A9.3.12. The 3 MXG Safety NCO – 2467.

A9.3.13. QA – Hotline/4842.

A9.3.14. Munitions Control – Hotline/3306.

A9.4. Other MOC Actions:

A9.4.1. Record info from the SOF on which safe area will be used due to airfield and wind conditions.

A9.4.2. Determine if other checklists need to be implemented.

A9.4.3. Post location, if available and applicable, on grid map.

A9.4.4. Enter all information received / action taken into STAT LOG.

A9.5. Maintenance Squadrons will:

A9.5.1. Notify MOC with applicable information.

A9.5.2. Have aircrew shut down the #2 engine.

A9.5.3. Have a certified Weapons Load Crew Chief do the following:

A9.5.3.1. F-22 position ARM/SAFE Handle to CLEAR and attempt to rotate gun system one full revolution. Then position ARM/SAFE Handle to SAFE/RELOAD (F-22). If jammed comply with A27.5.3.3 then proceed to A27.5.3.5.1.

A9.5.3.2. Set rounds limiter switch 990 Rounds Limit to ON (F-22).

A9.5.3.3. Ensure there is no loose / broken ammo.

A9.5.3.4. If there is loose / broken ammo rounds do the following:

A9.5.3.4.1. Notify the MOC with the extent of the situation.

A9.5.3.4.2. Notify the pilot to shutdown aircraft engines and direct personnel to safe the aircraft. Aircraft will remain there until all ammo and powder residue is removed and properly disposed.

A9.5.3.5. Ensure gun breech bolts are in cleared/safe position.

A9.5.3.6. If breech bolts are not in the cleared/safe position do the following:

A9.5.3.6.1. Notify the pilot of the situation.

A9.5.3.6.2. If gun breech bolts cannot be cleared / safe, notify pilot to shutdown aircraft engines and direct personnel to completely safe aircraft. Aircraft will remain there until gun breech bolts are cleared. Notify applicable squadrons.

A9.5.3.6.3. If gun breech bolts can be cleared and there is no loose / broken ammo found, safe the gun system. Send the aircraft back to the parking location. Notify the MOC of the situation

A9.6. MOC Senior Controller will confirm checklist complete:

A9.6.1. Verify additional checklists (if any) complete.

A9.6.2. Verify EAC-2G Jam/Runaway Gun checklist items complete.

A9.7. Additional Information:

A9.7.1. Aircraft will not return to parking until cleared by the Senior Fire Officer.

Attachment 10

REPAIR/MAINTENANCE OF F-22 WING WEAPONS PYLONS (WWP)

A10.1. Pre PAU/EED Maintenance.

A10.1.1. The following procedures will be used as a local checklist to ensure all agencies are contacted, personnel limitations are met, and safety briefings accomplished.

A10.1.2. Prior to start of maintenance or operations involving pyrotechnic arming units (PAU)/ electro-explosive devices (EED) at a minimum the following will be accomplished:

A10.1.3. The following conditions will be met prior to beginning PAU/EED maintenance or operations involving an exposed PAU/EED:

A10.1.3.1. Ensure 2A:10BC fire extinguishers are available in immediate area.

A10.1.3.2. Ensure static ground cord available.

A10.1.3.3. Close off all entry points, to minimize unnecessary traffic.

A10.1.3.4. Post signs on all entry points' to indicate an explosive operation is in progress.

A10.1.3.5. Change placards on building to 1.4.

A10.1.3.6. For actual PAU maintenance refer to T.O. 16W6-56-2.

A10.1.4. Brief all personnel on emergency procedures/Specific Safety, notify maintenance operation center (MOC) and Fire Department that an explosive operation is in progress, call the building up to 1.4, FIRE DEPT: 552-2801, MOC 552-4816/9321.

A10.2. Specific Safety Briefing:

A10.2.1. The PAU/EED contains 0.07 NEW and represents a 1.4C class hazard when exposed. The hazard associated with a 1.4 munitions is a moderate fire.

A10.2.2. No cell phones or land mobile radios (LMR) will be operated within 10 feet of pylons or PAU; **NO EXCEPTIONS**.

A10.2.3. There will be no more than **three** Armament personnel and **two** casuals in the immediate area when performing maintenance on PAU/EED.

A10.2.4. Remove all rings, watches, and jewelry before beginning task.

A10.2.5. Ground yourself prior to handling PAUs and at frequent intervals during operation.

A10.2.6. Garments will not be put on or removed while engaged in PAU/EED operation. If garments must be put on or removed, personnel will depart immediate area and ground themselves prior to returning.

A10.2.7. In the event of fire/mishap, the individual in charge of operation will:

A10.2.7.1. Fight fire and remove munitions if possible. Once the fire envelopes munitions the fire will not be fought, unless a rescue attempt is in progress.

A10.2.7.2. Direct the immediate evacuation of non-essential personnel to a minimum of 300 feet.

A10.2.7.3. Notify or direct notification to the Fire Department and local emergency 911.

A10.2.7.4. Notify or direct notification of emergency to MOC 552-4816/9321. MOC will run all appropriate checklists.

A10.2.7.5. Dispatch an individual to direct fire fighters upon arrival and provide the time fire enveloped the munitions and the type involved.

A10.3. Post PAU/EED Maintenance:

A10.3.1. After completion of the PAU/EED operation:

A10.3.1.1. Notify MOC and Fire Department explosive operation complete.

A10.3.1.2. Call the building down from 1.4.

A10.3.1.3. Remove signs from all entry points.

A10.3.1.4. Open all entry points.

A10.3.1.5. Change placards on building.

A10.3.1.6. Perform composite tool kit (CTK) inspection.

A10.3.1.7. Document forms, Tags, and integrated maintenance information system (IMIS), as applicable.

Table A10.1. Emergency Procedures.

BLDG: _____TIME/DATE PAU REMOVED: _____/_____

INSTALLED: _____/_____

PERSONNEL AND EQUIPMENT INVOLVED

Team chief: _____

Crew members: _____

Casuals/others: _____

Pylon Ser #: _____

HIGHEST CLS/DIV/SCG EXPLOSIVE: PAU/CART 1.4C

FIRE SYMBOL: -

NOTIFICATIONS:

TIME/PERSON CONTACTED

BEFORE / AFTER

MOC: 552-4816/9321 _____

FIRE: 552-2801 _____

-EXPLOSIVE LIMITS FOR THIS OPERATION ARE POSTED AT THE EXPLOSIVE AREA

-WITHDRAWAL DISTANCE FOR MUNITIONS NOT ENGULFED IN FLAMES: 300 FT (90th/Armament PARKING LOT)

-REQUIRED SAFETY EQUIPMENT: **PYLON STATIC GROUND, TWO 10 lb B/C FIRE EXTINGUISHERS**

-OPERATION WILL BE PERFORMED WITH NO LESS THAN TWO QUALIFIED PERSONNEL

-TOTAL PERSONNEL AUTHORIZED IN OPERATION AND AREA: FIVE (5)

A. CREW CHIEF WILL NOTIFY MOC OF MISHAP/ACCIDENT AND RECORD THE TIME IF FLAMES ENVELOPE MUNITIONS

TIME: _____

IF FIRE ENVELOPES MUNITIONS, FIRE WILL NOT BE FOUGHT UNLESS RESCUE ATTEMPT IS IN PROGRESS

B. CREW MEMBERS WILL FIGHT FIRE AND REMOVE MUNITIONS IF POSSIBLE, EVACUATE ALL NON-ESSENTIAL PERSONNEL 300 FT FROM HAZARD

C. THE ON-SCENE COMMANDER WILL DIRECT FIRE/EMERGENCY VEHICLES/PERSONNEL TO SCENE OF MISHAP

Attachment 11

MAINTENANCE AND HANDLING OF EXPLOSIVES LOADED AIRCRAFT

A11.1. Maintenance and Handling of Explosives Loaded Aircraft:

A11.1.1. Aircraft Parking. Parking of explosives loaded aircraft on the parking ramps will be done in accordance with the net explosives weight (NEW) chart. This chart will also be used for parking in H-16 Combat Alert Cell (CAC) and H-17 Slots 1-8. The chart is available on the Wing Safety web site or it can be obtained from the 3rd Wing Weapons Safety or 3 MXG Weapons Standardization offices directly.

A11.1.2. Maintenance Hangars H-1, H-2, H-3, H-4, & H-15. Aircraft parked in maintenance hangars will have all training missiles/pods isolated (F-22 N/A). All live missiles, impulse carts, ammunition, and chaff/flares will be downloaded/ removed. Exception: 20mm TP ammo may remain loaded. Exception: Local commander may authorize munitions loaded aircraft to enter maintenance hangars under emergency weather or environmental conditions. When this option is exercised, absolutely no maintenance of any kind will be performed on aircraft.

A11.1.3. Hush House Engine Test Cell. All munitions and stores, live or inert, will be downloaded from aircraft to include ACMI pods prior to entering test cell. Exception: 20mm TP ammo may remain loaded.

A11.1.4. H-19 and H-20 Fuel Barn's, Corrosion/Paint Barn. All munitions and stores, live or inert, will be downloaded from aircraft to include ACMI pods prior to entering these hangars.

A11.1.5. Munitions/Explosives On-Load/Off-Load Areas. Contact 3 WG Weapons Safety or Airfield Management for specifics concerning compensatory actions, additional restrictions covering explosive operations, and authorized NEWs at each location. Anytime munitions (except inert) are delivered/removed on aircraft (fighter or cargo), the controlling unit will notify the 3 WG MOC by radio or telephone. They must provide the hazard class division and any applicable fire/chemical hazard symbols. Units that upload/download munitions on aircraft will notify MOC of the current status by location on a real time basis. MOC will immediately provide this information to the Fire Alarm Communications Center. Notifications are also required when munitions are removed from sited locations.

A11.2. Launch and Recovery:

A11.2.1. Actions involving munitions during launch and recovery operations are limited to Redball maintenance, AIM-9 nose cover removal, and the securing of missile gear as applicable.

A11.2.2. Diaper pins and TDD covers will be stowed in the appropriate pin storage areas within the aircraft. On F-22A aircraft, nose dome covers and missile safing gear will be secured in the storage cage within the Side Weapons Bays before engine start. ACTM/AIM-9 dome covers will be placed in the bird cage in case of divert.

A11.3. Last Look:

A11.3.1. Aircraft Arming (F-22A). F-22A aircraft are armed in chalks per F-22A TOD 1400. No arming function is needed at end-of-runway. However, the aircraft crew chiefs may perform a last look.

A11.3.2. Aircraft De-arming (F-22A). F-22A aircraft are de-armed in chalks upon return to the parking area. However, safety is paramount, therefore a cursory inspection of the Chaff/Flare system and the safing of the gun will be performed in accordance with Local Commanders Option and Policy Letter for Munitions Operations and/or F-22A TOD 1400 series procedures.

A11.4. Safety Precautions:

A11.4.1. During end of runway (EOR) immediately prior to launch (IPL) operations, safety pins and safety devices will be stowed in the appropriate aircraft pin bags. Extreme caution will be taken at all times to prevent ingestion into aircraft engines.

A11.4.2. During IPL: If safety pins or devices cannot be removed or positioned with ordinary effort, the aircrew will be informed and the aircraft will be safed.

A11.4.3. Guns systems will only be armed/ set up for mission requirements as printed in the weekly flying schedule, AF Form 2407, *Weekly/Daily Flying Schedule Coordination*, and F-22A TOD 1400 series procedures. Aircraft loaded with forward firing munitions will be positioned in accordance with 3WGI 13-203, AFM 91-201, and TO 1F-15A 33-1-2. Aircraft will always be positioned in the direction least hazardous to personnel and resources in accordance with F-22A TOD 1400 series procedures.

A11.4.4. The aircraft will not be approached for safing until the aircrew places both hands in full view with closed fist to inform the qualified technician all armament switches are off, safe, or normal positions. Ground communication hookup will be established prior to commencing IPL/safing actions. If for any reason ground communication is inoperable, IPL/safing will begin with hand signals and the qualified technician will give the aircrew thumbs up signal upon completion.

A11.4.4.1. Aircraft will be safed in accordance with F-22A TOD 1400 series procedures/LCL-3WG/FLARE-1400 and/or F-22A TOD 1400 series procedures and 3 MXG Commanders Option and policy Letter for Munitions Operations.

A11.4.4.2. IPL/safing qualified technician will ensure all armament safety devices and protective covers are removed, installed, or positioned as applicable.

A11.4.4.3. Following “Hot” gun safing procedures will only be performed by a qualified 2W1X1.

A11.4.4.3.1. If gun is not clear: refer to emergency action checklist (EAC).

A11.4.4.3.1.1. When using the intersection of Taxiways D and N, North of Blue ramp, gold and blue spots 1 and 2 must be empty to maintain separation from the IPL/safing operation.

A11.4.4.3.1.2. When using Taxiway D, west of Taxiway D3 at approach end of Runway 34, Blue spots 27 and 28 must be empty to maintain separation from the IPL/safing operation.

A11.4.4.3.1.3. If light carts are required, they will be positioned to maintain at

least 10 feet of wing tip clearance.

A11.5. Emergency Procedures:

A11.5.1. **WARNING.** If loose or broken ammunition is evident during accomplishment of these procedures, notify the aircrew. Notify maintenance operation center (MOC) and safe aircraft. Direct aircraft to taxi to the authorized jammed gun area. Do not allow aircraft to return to the parking area until loose or broken ammunition and powder are removed.

A11.5.2. **NOTE:** A runaway gun is defined as a gun that fails to stop rotating when the trigger is released. A jammed gun is defined as a gun that starts to rotate and then stops for no apparent reason and cannot be rotated by hand. All other problems will be defined as a gun malfunction.

A11.5.3. Notification of weapons system malfunction: Pilot will notify tower of any known hung or malfunctioned weapons system prior to arrival. In this situation, the supervisor of flying (SOF) will direct aircraft to appropriate de-arm area for safing actions. The SOF will notify the MOC who will initiate emergency procedures.

A11.5.4. Upon notification, the MOC will declare an in-flight emergency (IFE) and initiate the appropriate EAC. AMUs will be notified through the MOC and will need to provide weapons personnel to assist EOD in safing and possibly downloading munitions at the recovery location.

A11.5.5. Comply with all requirements/restrictions contained in 3WGI 13-203.

A11.5.6. Gun/Missile & Forward-firing Ordnance Malfunctions. Comply with all requirements/restrictions contained in 3WGI 13-203.

A11.5.7. If a condition is discovered at end of runway (EOR), the EOR crew chief or supervisor will declare a ground emergency through the MOC, refer to the applicable emergency action checklist (EAC), and establish essential cordons. Direct aircraft to appropriate safing areas as necessary.

A11.5.8. If the response time of explosives ordinance disposal (EOD) is more than 10 minutes after the aircraft lands, or if an unsafe condition exists, Direct the aircrew to shut down aircraft and ground egress.

A11.5.9. Runaway Gun System. If a runaway gun exists, both engines will be shut down immediately. If the weapons technician determines a jammed or runaway gun does not exist, the aircraft gun will be safed for return to the parking ramp.

A11.5.10. Jammed Gun System: If a jammed gun exists, weapons personnel will safe the aircraft, munitions, and gun system prior to attempting to clear the gun. If the gun will not rotate or clear, Armament Flight personnel will be dispatched to try and clear the gun system. If gun system still cannot be cleared, refer to Attachment 12 of this instruction for further instructions.

A11.5.11. Hung Ordnance/Missiles: If a hung munitions exists, to include protruding flares, weapons personnel will wait for EOD to declare the munitions safe prior to performing aircraft safing actions. Once determined safe by EOD, weapons personnel will attempt to safe, secure, and/or download affected munitions.

A11.5.11.1. **WARNING** : Aircraft will not be towed or taxied back to the spot until all exposed explosives have been removed, properly disposed of, and/or cleared by EOD.

A11.6. Impounding Aircraft for Weapons Malfunctions

A11.6.1. Aircraft identified with hung munitions (does not include flares), inadvertent stores releases, or jammed/runaway gun systems will be impounded immediately following appropriate safing actions. Access to the aircraft and its weapons systems will be controlled in accordance with AFI 21-101 until the cause of the malfunction can be identified.

Attachment 12

DROPPED ORDINANCE

A12.1. The following procedures will be used to develop a local checklist to ensure all agencies are contacted, personnel limitations are met, and safety briefings accomplished. These are only the minimums.

A12.1.1. MOC will document:

A12.1.1.1. Date/Time Initiated.

A12.1.1.2. Type munitions.

A12.1.1.3. Hazard/Fire Class.

A12.1.1.4. Grid Location.

A12.1.1.5. Name of person.

A12.1.1.6. How did incident occur?

A12.1.1.7. Personnel involved.

A12.2. MOC will transmit the following across all nets:

A12.2.1. "ATTENTION ALL RADIOS THIS NET, ATTENTION ALL RADIOS THIS NET; THIS IS THE MOC WITH NOTIFICATION OF A UXO / DROPPED ORDINANCE. THE GRID LOCATION IS_____WITH AN EVACUATION DISTANCE OF_____ ALL RADIOS RESPOND WITH CALL SIGNS, MOC OUT."

A12.3. MOC will notify:

A12.3.1. Emergency Notifications (Complete FIRST!)

A12.3.1.1. Fire Dept – Hotline/2801.

A12.3.1.2. Base Ops – Hotline/2107.

A12.3.1.3. Security Police – Hotline/3105.

A12.3.1.4. Command Post – Hotline/3000.

A12.3.1.5. SOF – Hotline/3628.

A12.3.1.6. MXG CC – Hotline/3005.

A12.3.2. Armament Shop 8520 or 1328.

A12.3.3. Transient Alert (TA) – Hotline/4511.

A12.3.4. R&R – Hotline/2017.

A12.3.5. EOD – 3217/8555.

A12.3.6. Weapons Manager / Weapons Standardization 1055 / 1333.

A12.3.7. CMS Super – 0067.

A12.3.8. Wing Safety – 4128 (After hours use Wing Safety Duty Roster. Start with cell phone 227-8246).

A12.3.9. EMS Super – 0059.

A12.3.10. If RED ALAG ALASKA is active: RED FLAG AK MOC–Hotline/4564.

A12.3.11. POL – Hotline/4613.

A12.3.12. 3 MXG Safety NCO – 2467.

A12.3.13. QA – Hotline/4842.

A12.3.14. Munitions Control – Hotline/3306.

A12.4. Other MOC Actions:

A12.4.1. Record info from the SOF on which safe area will be used due to airfield and wind conditions.

A12.4.2. Determine if other checklists need to be implemented.

A12.4.3. Post location, if available and applicable, on grid map.

A12.4.4. Enter all information received / action taken into STAT LOG.

A12.5. Aircraft Maintenance Units will:

A12.5.1. Immediately evacuate personnel at least 300 feet.

A12.5.2. Cordon off the area (established by the Fire Department).

A12.5.3. Post Guards at a safe distance determined by the Fire Department.

A12.5.4. Notify the MOC with any new information.

A12.6. MOC Senior Controller will confirm checklist complete:

A12.6.1. Verify additional checklists (if any) complete.

A12.6.2. Verify EAC-2N-UXO/Dropped Ordinance is complete.

Attachment 13

WASH RACK SAFETY BRIEFING

A13.1. Wash supervisor and the AMU supervision will be responsible for supervision of the wash rack and all personnel working on it. This attachment implements the provisions of AFOSH 91-31, *Personal Protective Equipment,* and TO 1-1-691, *Cleaning and Corrosion Control*.

A13.2. Members of the wash team will be provided any required safety equipment by the AMUs.

A13.3. Damage to aircraft components can result from water/soap intrusion. Therefore, all covers called for in the technical data will remain installed for the duration of the wash.

A13.4. All protective clothing will be worn, including goggles/face shield, rubber gloves, water resistant boots, and wet weather clothing.

A13.5. Avoid skin contact with cleaning compounds.

A13.6. In the event of chemical injury, wash the areas immediately with water from the eyewash or shower and seek medical aid.

A13.7. There will be no horseplay at any time

A13.8. Use caution while climbing and/or walking on wet surfaces

A13.9. Maintenance stands will be used and the wheel locks will be engaged.

A13.10. Rings and watches will not be worn.

A13.11. Safety harness will be used when physically on top of aircraft.

A13.12. Maintenance stands will be used to wash top parts of aircraft that are inaccessible using safety harness.